

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 1 G 11  
 Edition : 12.09.86  
 Superceeded : 9.84  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 464 130  
 Injection pump  
 Pump designation : PES4A80D410/3RS1300  
 EP type number : 0 410 484 015  
 Governor  
 Governor design. : RSV325...1150A8C2163  
 -2L  
 Governor no. : 0 420 232 429

Customer-spec. information  
 Customer : KHD

Engine : F4L912

1st version kW : 51.0  
 Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve  
 : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00  
 : (1.85...2.05)

A01

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
 Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1175  
 -----  
 Contr.-rod trav.mm: 10.80...10.90  
 -----  
 Del.quantity cm3/ : 5.2...5.3  
 -----  
 100H.: (5.0...5.4)  
 -----  
 Dispersion cm3/ : 0.2  
 -----  
 100H.: (0.4)  
 -----  
 2nd speed 1/min: 325.0  
 Contr.-rod trav. m: 8.6...8.8  
 Del.quantity cm3/ : 0.9...1.5  
 100H.: (0.8...1.7)  
 Dispersion cm3/ : 0.2  
 100H.: (0.3)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 3.25

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1175  
 Del.quantity cm3/ : 52.0...53.0  
 1000H.: (50.5...54.5)  
 Dispersion cm3/ : 2.50  
 1000H.: (4.00)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 53...61

Testing:  
 1st c-rod trav.mm : 9.80  
 Speed 1/min : 1215...1225  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1255...1285  
 3rd c-rod trav.mm : 0.30...1.40  
 Speed 1/min : 1400  
 4th speed 1/min : 1275...1305

C-rod trav.mm : 4.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 8.2

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 325

C-rod trav.mm : 8.60...8.80

C-rod trav.mm : 2.00

Speed 1/min : 460...520

#### TORQUE CONTROL

Dimension a mm : 1.20

Torque-control curve - 1st version

1st speed 1/min : 1175

C-rod trav.mm : 10.80...10.90

2nd speed 1/min : 500

C-rod trav.mm : 12.00...12.10

4th speed 1/min : 1005

C-rod trav.mm : 11.10...11.30

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800

Del.quantity cm3/ : 51.5...53.5

1000H.: (49.5...55.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 1 G 21  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 464 131  
 Injection pump  
 Pump designation : PES4A80D410/3RS1300  
 EP type number : 0 410 484 015  
 Governor  
 Governor design. : RSV325...1175A8C657-2L  
 Governor no. : 0 420 232 458

Customer-spec. information  
 Customer : KHD

Engine : F4L912

1st version kW : 48.0  
 Speed 1/min: 2350

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00  
 : (1.85...2.05)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1175

Contr.-rod trav.mm: 9.60...9.70

Del.quantity cm3/ : 5.0...5.1

100H.: (4.9...5.3)

Dispersion cm3/ : 0.2

100H.: (0.4)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 7.9...8.1

Del.quantity cm3/ : 1.0...1.6

100H.: (0.8...1.7)

Dispersion cm3/ : 0.2

100H.: (0.3)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1175

Del.quantity cm3/ : 50.5...51.5

1000H.: (49.0...53.0)

Dispersion cm3/ : 2.50

1000H.: (4.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 45...53

Testing:

1st c-rod trav.mm : 8.60

Speed 1/min : 1215...1225

2nd c-rod trav.mm : 4.00

Speed 1/min : 1225...1255

3rd c-rod trav.mm : 0.30...1.40

Speed 1/min : 1415

4th speed 1/min : 1250...1280

C-rod trav.mm : 4.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 7.5

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 325

C-rod trav.mm : 7.90...8.10

C-rod trav.mm : 2.00

Speed 1/min : 435...495

#### TORQUE CONTROL

Dimension a mm : 1.10

Torque-control curve - 1st version

1st speed 1/min : 1175

C-rod trav.mm : 9.60...9.70

2nd speed 1/min : 500

C-rod trav.mm : 10.70...10.80

3rd speed 1/min : 1000

C-rod trav.mm : 10.20...10.40

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800

Del.quantity cm3/ : 52.0...54.0

1000H.: (50.0...56.0)

Speed 1/min : 1000

Del.quantity cm3/ : 52.5...54.5

1000H.: (50.5...56.5)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 1 G 25  
Edition : 20.10.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 464 132  
Injection pump  
Pump designation : PES4A80D410/3RS1349  
EP type number : 0 410 484 021  
Governor  
Governor design. : RSV325...1175A8C0657  
-3L  
Governor no. : 0 420 232 469

Customer-spec. information  
Customer : KHD

Engine : F4L912

1st version kW : 51.0  
Speed 1/min: 2350

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00  
: (1.85...2.05)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1175

Contr.-rod trav.mm: 10.10...10.20

Del.quantity cm3/ : 5.7...5.8

100H.: (5.6...6.0)

Dispersion cm3/ : 0.2

100H.: (0.4)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 6.8...7.0

Del.quantity cm3/ : 1.0...1.6

100H.: (0.8...1.7)

Dispersion cm3/ : 0.2

100H.: (0.3)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1175

Del.quantity cm3/ : 57.5...58.5

1000H.: (56.0...60.0)

Dispersion cm3/ : 2.50

1000H.: (4.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 48...56

Testing:

1st c-rod trav.mm : 9.10

Speed 1/min : 1215...1225

2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270

3rd c-rod trav.mm : 4.00

Speed 1/min : 1255...1270

4th speed 1/min : 1415

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 5.5

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 325

C-rod trav.mm : 5.90...6.10

C-rod trav.mm : 2.00

Speed 1/min : 460...520

#### TORQUE CONTROL

Dimension a mm : 0.85

Torque-control curve - 1st version

1st speed 1/min : 1175

C-rod trav.mm : 10.10...10.20

2nd speed 1/min : 500

C-rod trav.mm : 11.00...11.10

4th speed 1/min : 870

C-rod trav.mm : 10.50...10.70

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800

Del.quantity cm3/ : 54.0...56.0

1000H.: (52.0...58.0)

Remarks:

: DX3.70

APPLICATION

Tractor (tractor engines)

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 K  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 646 252  
 Injection pump  
 Pump designation : PE6A95D410RS2525  
 EP type number : 0 410 696 987  
 Governor  
 Governor design. : RQ225/1200AB1007L  
 Governor no. : 0 420 200 060

Customer-spec. information  
 Customer : DAF

Engine : DHR/DHTD 825

## TEST BENCH REQUIREMENTS

Calibrating-gil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 & c-rod trav max. : 21.0  
 Difference ° CS : 3.00...4.00

## BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm3/ : 10.9...11.0

100H.: (10.7...11.2)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 5.7...5.9

Del.quantity cm3/ : 0.7...1.2

100H.: (0.4...1.4)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 650

Contr.-rod travelmm: 19.20...20.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

### 1st version

Speed 1/min: 1000

Charge press. hPa : 700

Del.quantity cm3/ : 109.0...110.0

1000H.: (107.0...112.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 650

Contr.-rod trav.mm: 20.0

### Testing:

1st c-rod trav.mm : 11.60

Speed 1/min : 1230...1245

2nd c-rod trav.mm : 4.00

Speed 1/min : 1315...1345

4th speed 1/min : 1390  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 225

Contr.-rod trav.mm: 5.8

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.20

Speed 1/min : 225

C-rod trav.mm : 5.70...5.90

C-rod trav.mm : 2.00

Speed 1/min : 340...380

Speed 1/min : 450

C-rod trav.mm max : 1.00

#### TORQUE CONTROL

Dimension a mm : -

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 12.60...12.70

2nd speed 1/min : 1200

C-rod trav.mm : 12.50...12.70

compensator (LDA,ADA,ALDA)

#### 1st version

##### Setting

Speed 1/min : 1000

Pressure hPa : 700

Contr.-rod trav.mm: 12.60...12.70

##### Measurement

Speed 1/min : 1000

1st pressure hPa : 300

C-rod trav.mm : 12.30...12.40

2nd pressure hPa : 260

C-rod trav.mm : 11.70...12.00

3rd pressure hPa : -

C-rod trav.mm : 11.50...11.60

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 85.5...86.5

1000H.: (83.5...88.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 I  
Edition : 12.09.86  
Superceeded : 4.86  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 646 256  
  
Injection pump  
Pump designation : PE6A90D32ORS2547  
EP type number : 0 410 696 180  
Governor  
Governor design. : RQ250/1200AB1022R  
Governor no. : 0 420 201 619

Customer-spec. information  
Customer : DAF

Engine : DT615

1st version kW : -

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30  
: (2.15...2.35)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1- 5- 3- 6- 2- 4

A09

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
Difference ° CS : 2.50...3.50

## BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 10.80...10.90

Del.quantity cm3/ : 7.1...7.2

100H.: (6.9...7.4)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.1...1.5

100H.: (0.9...1.7)

Dispersion cm3/ : 0.2

100H.: (-)

## SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 650

Cont.-rod travelmm: 19.20...20.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 700

Del.quantity cm3/ : 71.5...72.5

1000H.: (69.5...74.5)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 650

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 9.80

Speed 1/min : 1245...1265

2nd c-rod trav.mm : 4.00

Speed 1/min : 1340...1370  
4th speed 1/min : 1500  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250  
Contr.-rod trav.mm: 7.0

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.50  
Speed 1/min : 250  
C-rod trav.mm : 6.90...7.10  
C-rod trav.mm : 2.00  
Speed 1/min : 380...420  
Speed 1/min : 510  
C-rod trav.mm max : 1.00

compensator (LDA,ADA,ALDA)

#### 1st version

##### Setting

Speed 1/min : 1000  
Pressure hPa : 700  
Contr.-rod trav.mm: 10.80...10.90

##### Measurement

Speed 1/min : 1000

1st pressure hPa : -  
C-rod trav.mm : 9.80...10.00  
2nd pressure hPa : 200  
C-rod trav.mm : 10.60...10.70  
3rd pressure hPa : 120  
C-rod trav.mm : 9.90...10.10

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -  
Speed 1/min : 600  
Del.quantity cm3/ : 51.5...53.5  
1000H.: (49.5...55.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 K 2  
 Edition : 12.09.86  
 Superceeded : 4.86  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 646 268  
 Injection pump  
 Pump designation : PE6A95D410RS2525  
 EP type number : 0 410 696 987  
 Governor  
 Governor design. : RQ225/1200AB1156L  
 Governor no. : 0 420 200 079

Customer-spec. information  
 Customer : DAF

Engine : DH 825

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness : 6.00X1.50X600  
 x Length mm

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.15)  
 Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 & c-rod tray max. : 21.0  
 Difference ° CS : 3.00...4.00

## BASIC SETTING

1st speed 1/mi: 1200  
 -----  
 Contr.-rod trav.mm: 10.40...10.50  
 -----  
 Del.quantity cm3/ : 7.3...7.5  
 -----  
 100H.: (7.1...7.7)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.6)  
 -----  
 2nd speed 1/min: 225.0  
 Contr.-rod trav. m: 5.9...6.1  
 Del.quantity cm3/ : 0.7...1.1  
 100H.: (0.4...1.3)  
 Dispersion cm3/ : 0.3  
 100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
 Degree: -2  
 Speed 1/min: 650  
 Cont.-rod travelmm: 19.20...20.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1200  
 Del.quantity cm3/ : 73.0...75.0  
 1000H.: (71.0...77.0)  
 Dispersion cm3/ : 3.50  
 1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:  
 Speed 1/min : 650  
 Contr.-rod trav.mm: 20.0

Testing:  
 1st c-rod trav.mm : 9.40  
 Speed 1/min : 1245...1260  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1300...1330  
 4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 225

Contr.-rod trav.mm: 6.0

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.50

Speed 1/min : 225

C-rod trav.mm : 5.90...6.10

C-rod trav.mm : 2.00

Speed 1/min : 345...385

Speed 1/min : 490

C-rod trav.mm max : 1.00

#### TORQUE CONTROL

Dimension a mm : 0.35

Torque-control curve - 1st version

1st speed 1/min : 1200

C-rod trav.mm : 10.40...10.50

2nd speed 1/min : 650

C-rod trav.mm : 11.30...11.40

4th speed 1/min : 1035

C-rod trav.mm : 10.90...11.10

5th speed 1/min : 1100

C-rod trav.mm : 10.50...10.80

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800

Del.quantity cm3/ : 74.5...77.5

100QH.: (72.0...80.0)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 I 7  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 646 274  
 Injection pump  
 Pump designation : PE6A90D32ORS2547  
 EP type number : 0 410 696 180  
 Governor  
 Governor design. : RQ250/1250AB1212R  
 Governor no. : 0 420 201 644

Customer-spec. information  
 Customer : DAF

Engine : DT615V

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30  
 : (2.15...2.35)  
 Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 Difference ° CS : 2.50...3.50

## BASIC SETTING

1st speed 1/mi: 1000  
 -----  
 Contr.-rod trav.mm: 10.30...10.40  
 -----  
 Del.quantity cm3/ : 6.3...6.4  
 -----  
 100H.: (6.1...6.6)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.5)  
 -----

2nd speed 1/min: 250.0  
 Contr.-rod trav. m: 6.1...6.3  
 Del.quantity cm3/ : 1.0...1.4  
 100H.: (0.8...1.6)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
 Degree: -2  
 Speed 1/min: 500  
 Cont.-rod travelmm: 19.20...20.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1000  
 Del.quantity cm3/ : 63.0...64.0  
 1000H.: (61.0...66.0)  
 Dispersion cm3/ : 3.00  
 1000H.: (5.00)

## HIGHEST RATED SPEED

Setting point:  
 Speed 1/min : 500  
 Contr.-rod trav.mm: 20.0

Testing:  
 1st c-rod trav.mm : 9.30  
 Speed 1/min : 1285...1300  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1340...1370

## LOWEST RATED SPEED I

Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 6.2

Testing:  
Speed 1/min : 100  
C-rod trav.mm min : 7.70  
Speed 1/min : 250  
C-rod trav.mm : 6.10...6.30  
C-rod trav.mm : 2.00  
Speed 1/min : 295...335

TORQUE CONTROL  
Torque-control curve - 1st version  
1st speed 1/min : 1250  
C-rod trav.mm : 10.50...10.60  
2nd speed 1/min : 500  
C-rod trav.mm : 10.50...10.70

SWITCH-OVER POINT  
Speed 1/min : 100 (80)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 9,6 I 2  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 646 275  
Injection pump  
Pump designation : PE6A95D410LS2621  
EP type number : 0 410 696 982  
Governor  
Governor design. : RQ300/1250AB1148-1L  
Governor no. : 0 420 200 104

Customer-spec. information  
Customer : KHD

Engine : F6L413F

1st version kW : 141.0  
Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
                  : (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 6- 5- 4- 3- 2

SD ang. spacing<sup>0</sup>CS: 0-75-120-195-240-315  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 10.40...10.50

Del.quantity cm3/ : 9.4...9.6

100H.: (9.2...9.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm3/ : 0.8...1.4

100H.: (0.5...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Del.quantity cm3/ : 94.0...96.0

1000H.: (92.0...98.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 9.40

Speed 1/min : 1295...1310

2nd c-rod trav.mm : 4.00

Speed 1/min : 1325...1355

## LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.5

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 7.90  
Speed 1/min : 300  
C-rod trav.mm : 6.40...6.60  
C-rod trav.mm : 2.00  
Speed 1/min : 340...380

TORQUE CONTROL

Dimension a mm : 0.30  
Torque-control curve - 1st version  
1st speed 1/min : 1250  
C-rod trav.mm : 10.40...10.50  
2nd speed 1/min : 600  
C-rod trav.mm : 11.20...11.30  
3rd speed 1/min : 935  
C-rod trav.mm : 11.00...11.20  
4th speed 1/min : 1050  
C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 650  
Del.quantity cm3/ : 93.5...96.5  
1000H.: (91.0...99.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 12,7 P  
Edition : 12.09.86  
Superceeded : 9.84  
Calibrating oil : ISO-4113  
Combination no. : 0 400 648 128  
Injection pump  
Pump designation : PE8A95D410LS2608  
EP type number : 0 410 698 988  
Governor  
Governor design. : RQV300...1100AB1126L  
Governor no. : 0 420 212 140

Customer-spec. information  
Customer : KHD

Engine : F8L413F

1st version kW : 133.0  
Speed 1/min: 2200

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
: (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5- 4-  
3

SD ang. spacing°CS: 0-45-90-135-180-225-  
270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 10.00...10.10

Del.quantity cm3/ : 8.9...9.1

100H.: (8.7...9.3)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm3/ : 1.2...2.0

100H.: (0.9...2.2)

Dispersion cm3/ : 0.5

100H.: (0.7)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.70...0.80

2nd speed 1/min: 450

Sleeve travel mm: 1.90...2.20

3rd speed 1/min: 950

Sleeve travel mm: 6.00...6.60

4th speed 1/min: 1215

Sleeve travel mm: 8.50...9.10

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1175

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 89.0...91.0

1000H.: (87.0...93.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 48...56

#### Testing:

1st c-rod trav.mm : 9.00

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1200...1230

4th speed 1/min : 1350

C-rod trav.mm : 0...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 14...20

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.00

Speed 1/min : 300

C-rod trav.mm : 6.40...6.60

#### CONSTANT REGULATION

Speed 1/min : 415...535

#### TORQUE CONTROL

Dimension a mm : 0.50

Torque-control curve - 1st version

1st speed 1/min : 1100

C-rod trav.mm : 10.00...10.10

2nd speed 1/min : 500

C-rod trav.mm : 10.50...10.60

3rd speed 1/min : 760

C-rod trav.mm : 10.30...10.50

4th speed 1/min : 890

C-rod trav.mm : 10.00...10.20

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 650

Del.quantity cm<sup>3</sup>/ : 90.5...93.5

1000H.: (88.0...96.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 12,7 N  
 Edition : 12.09.86  
 Superceeded : 11.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 648 129  
 Injection pump  
 Pump designation : PE8A95D410LS2609  
 EP type number : 0 410 698 987  
 Governor  
 Governor design. : RQV300...1250AB1128L  
 Governor no. : 0 420 212 141

Customer-spec. information  
 Customer : KHD

Engine : BF8L413F

1st version kW : 235.0  
 Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values \_\_\_\_\_

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.80...1.90  
 : (1.75...1.95)  
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5-  
 4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-  
 270-315  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1250  
 -----  
 Contr.-rod trav.mm: 11.60...11.70  
 -----  
 Del.quantity cm3/ : 11.9...12.1  
 -----  
 100H.: (11.7...12.3)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.6)  
 -----

2nd speed 1/min: 300.0  
 Contr.-rod trav. m: 6.4...6.6  
 Del.quantity cm3/ : 1.6...2.2  
 100H.: (1.3...2.4)  
 Dispersion cm3/ : 0.3  
 100H.: (0.5)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 320  
 Sleeve travel mm: 1.70...1.90  
 2nd speed 1/min: 600  
 Sleeve travel mm: 3.00...3.20  
 3rd speed 1/min: 1000  
 Sleeve travel mm: 5.40...5.60  
 4th speed 1/min: 1300  
 Sleeve travel mm: 8.40...8.50

## SLEEVE POSITION

Control-lever position  
 Degree: -1  
 Speed 1/min: 1300  
 Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1250  
 Charge press. hPa : 700  
 Del.quantity cm3/ : 119.0...121.0  
 1000H.: (117.0...123.0)  
 Dispersion cm3/ : 3.50  
 1000H.: (6.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 61...69

Testing:

1st c-rod trav.mm : 10.60

Speed 1/min : 1290...1300

2nd c-rod trav.mm : 4.00

Speed 1/min : 1380...1410

4th speed 1/min : 1450

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.00

Speed 1/min : 300

C-rod trav.mm : 6.40...6.60

## CONSTANT REGULATION

Speed 1/min : 315...420

## TORQUE CONTROL

Dimension a mm : 0.75

Torque-control curve - 1st version:

1st speed 1/min : 1250

C-rod trav.mm : 11.60...11.70

2nd speed 1/min : 750

C-rod trav.mm : 12.30...12.40

3rd speed 1/min : 960

C-rod trav.mm : 12.20...12.40

4th speed 1/min : 1090

C-rod trav.mm : 11.70...12.00

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 12.30...12.40

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.30...11.40

2nd pressure hPa : 270

C-rod trav.mm : 12.10...12.20

3rd pressure hPa : 225

C-rod trav.mm : 11.50...11.70

## SWITCH-OVER POINT

Speed 1/min : 220 (240)

## FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 750

Del.quantity cm3/ : 124.5...127.5

1000H.: (122.0...130.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 105.0...107.0

1000H.: (103.0...109.0)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 12,7 P2  
Edition : 12.09.86  
Superceeded : 9.85  
Calibrating oil : ISO-4113

Combination no. : 0 400 648 141

Injection pump  
Pump designation : PE8A9SD410LS2608  
EP type number : 0 410 698 988  
Governor  
Governor design. : RQV300...1250AB1195L  
Governor no. : 0 420 212 172

Customer-spec. information  
Customer : KHD

Engine : F8L413F

1st version kW : 188.0  
Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
: (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5- 4-  
3

SD ang. spacing<sup>o</sup>CS: 0-45-90-135-180-225-  
270-315  
Tolerance + - <sup>o</sup> : 0.50 (0.75)

SD mark cyl. no. : 1

#### BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 10.40...10.50

Del.quantity cm3/ : 9.4...9.6

100H.: (9.2...9.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.5...6.7

Del.quantity cm3/ : 0.8...1.4

100H.: (0.5...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with  
externally-mounted governor

#### SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.20...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.80...3.00

3rd speed 1/min: 1000

Sleeve travel mm: 6.50...6.70

4th speed 1/min: 1290

Sleeve travel mm: 8.60...8.80

5th speed 1/min: 1375

Sleeve travel mm: 9.40...9.60

#### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1275

Cont.-rod travelmm: 15.20...17.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Del.quantity cm3/ : 94.0...96.0

1000H.: (92.0...98.0)

Dispersion cm3/ : 3.50  
1000H.: (6.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 47...55

Testing:

1st c-rod trav.mm : 9.40

Speed 1/min : 1290...1300

2nd c-rod trav.mm : 4.50

Speed 1/min : 1360...1390

4th speed 1/min : 1500

C-rod trav.mm : 0.30...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 14...22

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.00

Speed 1/min : 300

C-rod trav.mm : 6.50...6.70

#### CONSTANT REGULATION

Speed 1/min : 375...485

#### TORQUE CONTROL

Dimension a mm : 0.50

Torque-control curve - 1st version

1st speed 1/min : 1250

C-rod trav.mm : 10.40...10.50

2nd speed 1/min : 500

C-rod trav.mm : 10.90...11.00

3rd speed 1/min : 850

C-rod trav.mm : 10.70...10.90

4th speed 1/min : 950

C-rod trav.mm : 10.50...10.70

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 650

Del.quantity cm3/ : 93.5...96.5

1000H.: (91.0...99.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : TAM 12.7 A  
 Edition : 12.09.86  
 Superceeded : 4.86  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 648 143  
 Injection pump  
 Pump designation : PE8A95D410LS2451  
 EP type number : 0 410 698 992  
 Governor  
 Governor design. : RQV300...1150AB1045-1L  
 Governor no. : 0 420 212 189  
 Customer-spec. information  
 Customer : TAM  
 Engine : F8L413F  
 1st version kW : 173.0  
 Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000  
 Inlet press., bar : 1.00  
 Calibrating nozzle-holder  
 assembly : 0 681 343 009  
 Opening  
 pressure, bar : 172...175  
 Test inj. tubing : 1 680 750 014  
 Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600  
 (A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27  
 Prestroke mm : 2.00...2.10  
 : (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 8- 7- 2- 6- 5-  
 4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-  
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 9.30...9.40

Del.quantity cm3/ : 8.6...8.8

100H.: (8.4...9.0)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm3/ : 1.4...2.4

100H.: (1.1...2.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 200

Sleeve travel mm: 0.70...0.90

2nd speed 1/min: 600

Sleeve travel mm: 3.90...4.10

3rd speed 1/min: 850

Sleeve travel mm: 6.90...7.10

4th speed 1/min: 1200

Sleeve travel mm: 8.30...8.50

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1200

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 86.0...88.0

1000H.: (84.0...90.0)

Dispersion cm3/ : 3.00

1000H.: (6.00)

# HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 42...50

## Testing:

1st c-rod trav.mm : 8.30

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1225...1255

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

# LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.00

Speed 1/min : 300

C-rod trav.mm : 6.40...6.60

# CONSTANT REGULATION

Speed 1/min : 330...445

# TORQUE CONTROL

Dimension a mm : 0.40

Torque-control curve - 1st version

1st speed 1/min : 1150

C-rod trav.mm : 9.30...9.40

2nd speed 1/min : 500

C-rod trav.mm : 9.70...9.80

3rd speed 1/min : 765

C-rod trav.mm : 9.50...9.70

4th speed 1/min : 820

C-rod trav.mm : 9.40...9.60

# SWITCH-OVER POINT

Speed 1/min : 220 (240)

# FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1000

Del.quantity cm3/ : 86.5...89.5

1000H.: (84.5...91.5)

Speed 1/min : 700

Del.quantity cm3/ : 86.5...89.5

1000H.: (84.5...91.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 12,7 P3  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 648 144  
 Injection pump  
 Pump designation : PE8A95D410LS2608  
 EP type number : 0 410 698 988  
 Governor  
 Governor design. : RQ300/1250AB929-1L  
 Governor no. : 0 420 200 103

Customer-spec. information  
 Customer : KHD

Engine : F8L413F

1st version kW : 154.0  
 Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

START OF DELIVERY  
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.15)  
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5-  
 4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-  
 270-315  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 8.70...8.80

Del.quantity cm3/ : 7.6...7.8

100H.: (7.4...8.0)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm3/ : 0.9...1.5

100H.: (0.6...1.7)

Dispersion cm3/ : 0.5

100H.: (0.7)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 650

Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Del.quantity cm3/ : 76.0...78.0

1000H.: (74.0...80.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 650

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 7.70

Speed 1/min : 1295...1310

2nd c-rod trav.mm : 4.00

Speed 1/min : 1335...1365

## LOWEST RATED SPEED I

Setting point w/out aux. spring  
Speed 1/min : 300  
Contr.-rod trav.mm: 6.5

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.00  
Speed 1/min : 300  
C-rod trav.mm : 6.40...6.60  
C-rod trav.mm : 2.00  
Speed 1/min : 410...450

TORQUE CONTROL

Dimension a mm : 0.40  
Torque-control curve - 1st version  
1st speed 1/min : 1250  
C-rod trav.mm : 8.70...8.80  
2nd speed 1/min : 650  
C-rod trav.mm : 9.50...9.60  
3rd speed 1/min : 985  
C-rod trav.mm : 9.30...9.40  
4th speed 1/min : 1125  
C-rod trav.mm : 8.80...9.10

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 850  
Del.quantity cm3/ : 76.5...79.5  
1000H.: (74.0...82.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 15,8 K2  
Edition : 20.10.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 649 173  
Injection pump  
Pump designation : PE10A85D610/4LS2243  
EP type number : 0 410 689 993  
Governor  
Governor design. : RQV300...1325AB938DL  
Governor no. : 0 420 214 209

Customer-spec. information  
Customer : KHD

Engine : F10L413

1st version kW : 213.3  
Speed 1/min: 2650

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60  
: (1.45...1.65)  
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-10- 9- 4- 3- 6-  
5- 8- 7- 2

SD ang. spacing°CS: 0-27-72-99-144-171-2  
16-243-288-315  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1325

Contr.-rod trav.mm: 10.70...10.80

Del.quantity cm3/ : 7.8...7.9

100H.: (7.6...8.1)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.0...1.6

100H.: (0.8...1.8)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1340

Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1325

Del.quantity cm3/ : 78.0...79.0

1000H.: (76.0...81.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

Setting point:

Speed 1/min : 1340

Contr.-rod trav.mm: 16.5

Testing:

1st c-rod trav.mm : 9.70

Speed 1/min : 1365...1375

2nd c-rod trav.mm : 4.00

Speed 1/min : 1425...1455  
4th speed 1/min : 1500  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 10...18

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.50  
Speed 1/min : 300  
C-rod trav.mm : 6.90...7.10  
C-rod trav.mm : 2.00  
Speed 1/min : 755...785

#### TORQUE CONTROL

Dimension a mm : 0.70  
Torque-control curve - 1st version  
1st speed 1/min : 1325  
C-rod trav.mm : 10.70...10.80  
2nd speed 1/min : 600  
C-rod trav.mm : 11.40...11.50

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800  
Del.quantity cm3/ : 76.0...79.0  
1000H.: (73.5...81.5)  
Speed 1/min : 1000  
Del.quantity cm3/ : 76.5...79.5  
1000H.: (74.0...82.0)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 15,8 B  
Edition : 12.09.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113  
Combination no. : 0 400 649 223  
Injection pump  
Pump designation : PE10A95D610/4LS2452  
EP type number : 0 410 699 998  
Governor  
Governor design. : RQV300...1250AB1129L  
Governor no. : 0 420 212 143

Customer-spec. information  
Customer : KHD

Engine : F10L413F

1st version kW : 228.0  
Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
: (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-10- 9- 4- 3- 6-  
5- 8- 7- 2

SD ang. spacing°CS: 0-27-72-99-144-171-  
216-243-288-315  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 10.30...10.40

Del.quantity cm3/ : 9.1...9.3

100H.: (8.9...9.5)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.2...1.6

100H.: (0.9...1.8)

Dispersion cm3/ : 0.35

100H.: (0.55)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.20...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.80...3.00

3rd speed 1/min: 1000

Sleeve travel mm: 6.50...6.70

4th speed 1/min: 1290

Sleeve travel mm: 8.60...8.80

5th speed 1/min: 1375

Sleeve travel mm: 9.40...9.60

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1275

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Del.quantity cm3/ : 91.0...93.0

1000H.: (89.0...95.0)

Dispersion cm<sup>3</sup>/ : 3.50  
1000H.: (6.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 47...55

#### Testing:

1st c-rod trav.mm : 9.30  
Speed 1/min : 1290...1300  
2nd c-rod trav.mm : 4.50  
Speed 1/min : 1360...1390  
4th speed 1/min : 1500  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 14...22

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.50  
Speed 1/min : 300  
C-rod trav.mm : 6,9...7,1

#### CONSTANT REGULATION

Speed 1/min : 375...485

#### TORQUE CONTROL

Dimension a mm : 0.50  
Torque-control curve - 1st version  
1st speed 1/min : 1250  
C-rod trav.mm : 10.30...10.40  
2nd speed 1/min : 500  
C-rod trav.mm : 10.80...10.90  
3rd speed 1/min : 885  
C-rod trav.mm : 10.60...10.80  
4th speed 1/min : 1000  
C-rod trav.mm : 10.40...10.60

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 650  
Del.quantity cm<sup>3</sup>/ : 92.5...95.5  
1000H.: (90.0...98.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : HAN 10,8 F3  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 674 042  
  
Injection pump  
Pump designation : PE4A95D42ORS2556  
EP type number : 0 410 694 996  
Governor  
Governor design. : RSV350...1100A8C1120  
R  
Governor no. : 0 420 233 175

Customer-spec. information  
Customer : HANOMAG

Engine : D943

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000  
  
Inlet press., bar : 1.00  
  
Calibrating nozzle-holder  
assembly : 0 681 343 009  
  
Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 003

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27  
  
Prestroke mm : 2.15...2.25  
                  : (2.10...2.30)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 2- 4- 3

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1100  
-----  
Contr.-rod trav.mm: 10.00...10.10  
-----  
Del.quantity cm3/ : 9.3...9.5  
-----  
100H.: (9.1...9.7)  
-----  
Dispersion cm3/ : 0.3  
-----  
100H.: (0.6)  
-----  
2nd speed 1/min: 400.0  
Contr.-rod trav. m: 7.9...8.1  
Del.quantity cm3/ : 4.0...5.0  
100H.: (3.7...5.2)  
Dispersion cm3/ : 0.3  
100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload  
Notch setting x : 4.50

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1100  
Del.quantity cm3/ : 93.0...95.0  
1000H.: (91.0...97.0)  
Dispersion cm3/ : 3.50  
1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 48...56

## Testing:

1st c-rod trav.mm : 9.00  
Speed 1/min : 1140...1150  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1165...1195  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1205...1235  
4th speed 1/min : 1365  
C-rod trav.mm : 0.30...1.40

# LOWEST RATED SPEED I

Control-lever

position degrees: 19...27

Setting point w/out aux. spring

Speed 1/min : 400

Contr.-rod trav.mm: 7.5

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 400

C-rod trav.mm : 7.90...8.10

C-rod trav.mm : 2.00

Speed 1/min : 580...640

Speed 1/min : 600

## TORQUE CONTROL

Dimension a mm : 0.90

Torque-control curve - 1st version

1st speed 1/min : 1100

C-rod trav.mm : 10.00...10.10

2nd speed 1/min : 1005

C-rod trav.mm : 10.40...10.60

3rd speed 1/min : 500

C-rod trav.mm : 10.90...11.00

## FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700

Del.quantity cm3/ : 100.0...103.0

1000H.: (98.0...105.0)

Speed 1/min : 500

Del.quantity cm3/ : 92.0...94.0

1000H.: (90.0...96.0)

## Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : HAN 7,2 B  
Edition : 12.09.86  
Superceeded : 1.83  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 674 044  
  
Injection pump  
Pump designation : PE4A95D42ORS2662  
EP type number : 0 410 694 995  
Governor  
Governor design. : RSV350...1100ABC1120  
R  
Governor no. : 0 420 233 175  
  
Customer-spec. information  
Customer : HANOMAG

Engine : D943 A1

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 411 000  
  
Inlet press., bar : 1.00  
  
Calibrating nozzle-holder  
assembly : 0 681 343 009  
  
Opening  
pressure, bar : 172...175  
  
Test inj. tubing : 1 680 750 003  
  
Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27  
  
Prestroke mm : 2.15...2.25  
                  : (2.10...2.30)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 2- 4- 3

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1100  
-----  
Contr.-rod trav.mm: 11.30...11.40  
-----  
Del.quantity cm3/ : 10.9...11.1  
100H.: (10.7...11.3)  
-----  
Dispersion cm3/ : 0.3  
100H.: (0.6)  
-----  
2nd speed 1/min: 350.0  
Contr.-rod trav. m: 6.4...6.6  
Del.quantity cm3/ : 1.1...1.7  
100H.: (0.8...1.9)  
Dispersion cm3/ : 0.3  
100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload  
Notch setting x : 3.75

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1100  
Del.quantity cm3/ : 109.5...111.5  
1000H.: (107.5...113.5)  
Dispersion cm3/ : 3.00  
1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 45...53

## Testing:

1st c-rod trav.mm : 10.30  
Speed 1/min : 1140...1150  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1175...1205  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1195...1225  
4th speed 1/min : 1360  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 15...23

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 6.0

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 350

C-rod trav.mm : 6.40...6.60

C-rod trav.mm : 2.00

Speed 1/min : 490...550

#### TORQUE CONTROL

Dimension a mm : 0.50

Torque-control curve - 1st version

1st speed 1/min : 1100

C-rod trav.mm : 11.30...11.40

2nd speed 1/min : 500

C-rod trav.mm : 11.80...11.90

3rd speed 1/min : 980

C-rod trav.mm : 11.40...11.60

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 104.0...107.0

1000H.: (102.0...109.0)

Dispersion cm3/ : 4.00

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.

#### APPLICATION

Wheel loader

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 I 1  
 Edition : 12.09.86  
 Superceeded : 4.86  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 141  
 Injection pump  
 Pump designation : PE6A90D32ORS2547  
 EP type number : 0 410 696 180  
 Governor  
 Governor design. : RSV250...1200ASB779R  
 Governor no. : 0 420 233 121

Customer-spec. information  
 Customer : DAF

Engine : DT615

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values \_\_\_\_\_

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30  
 : (2.15...2.35)  
 Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 Difference ° CS : 2.50...3.50

## BASIC SETTING

1st speed 1/mi: 1000  
 -----  
 Contr.-rod trav.mm: 10.80...10.90  
 -----  
 Del.quantity cm3/ : 7.1...7.2  
 -----  
 100H.: (6.9...7.4)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.4)  
 -----  
 2nd speed 1/min: 250.0  
 Contr.-rod trav. m: 5.9...6.1  
 Del.quantity cm3/ : 0.9...1.3  
 100H.: (0.7...1.5)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...1.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1000  
 Charge press. hPa : 700  
 Del.quantity cm3/ : 71.0...72.0  
 1000H.: (69.0...74.0)  
 Dispersion cm3/ : 3.00  
 1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 47...55

Testing:  
 1st c-rod trav.mm : 9.80  
 Speed 1/min : 1240...1250  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1275...1305  
 3rd c-rod trav.mm : 4.00  
 Speed 1/min : 1285...1305

4th speed 1/min : 1450  
C-rod trav.mm : 0.30...1.70

#### LOWEST RATED SPEED I

Control-lever

position degrees: 13...21  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 5.5  
Speed 1/min : 250  
C-rod trav.mm : 5.90...6.10  
C-rod trav.mm : 2.00  
Speed 1/min : 330...3950

#### TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1000  
C-rod trav.mm : 11.10...11.20  
2nd speed 1/min : 400  
C-rod trav.mm : 11.30...11.40  
5th speed 1/min : 300  
C-rod trav.mm : 11.50...12.00

compensator (LDA,ADA,ALDA)

#### 1st version

Setting

Speed 1/min : 600  
Pressure hPa : 700  
Contr.-rod trav.mm: 10.80...10.90

#### Measurement

Speed 1/min : 600  
1st pressure hPa : -  
C-rod trav.mm : 9.80...10.00  
2nd pressure hPa : 250  
C-rod trav.mm : 10.60...10.70  
3rd pressure hPa : 210  
C-rod trav.mm : 10.10...10.40

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -  
Speed 1/min : 600  
Del.quantity cm3/ : 51.5...53.5  
1000H.: (49.5...55.5)

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-1-420/114.



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 K 1  
Edition : 12.09.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 676 152  
  
Injection pump  
Pump designation : PE6A9SD410RS2525  
EP type number : 0 410 696 987  
Governor  
Governor design. : RSV250...1200A5B2013  
DL  
Governor no. : 0 420 234 380

Customer-spec. information  
Customer : DAF

Engine : DHR/DHTD 825

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6,00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
: (1.95...2.15)  
Contr.-rod trav.mm: 7.50...10.50  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
& c-rod trav max. : 21.0  
Difference ° CS : 3.00...4.00

## BASIC SETTING

1st speed 1/mi: 1000  
-----  
Contr.-rod trav.mm: 12.60...12.70  
-----  
Del.quantity cm3/ : 10.8...11.0  
-----  
100H.: (10.6...11.2)  
-----  
Dispersion cm3/ : 0.3  
-----  
100H.: (0.6)  
-----  
2nd speed 1/min: 250.0  
Contr.-rod trav. m: 6.0...6.2  
Del.quantity cm3/ : 0.7...1.1  
100H.: (0.45...1.35)  
Dispersion cm3/ : 0.35  
100H.: (0.55)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...1.00

Governor-spring reload  
Notch setting x : 4.25

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1000  
Charge press. hPa : 700  
Del.quantity cm3/ : 108.5...110.5  
1000H.: (106.5...112.5)  
Dispersion cm3/ : 3.50  
1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 51...59

Testing:  
1st c-rod trav.mm : 11.60

Speed 1/min : 1230...1240  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1290...1320  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1325...1355  
4th speed 1/min : 1490  
C-rod trav.mm : 0.30...1.70

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 17...25  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 5.6

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 250  
C-rod trav.mm : 6.00...6.20  
C-rod trav.mm : 2.00  
Speed 1/min : 445...505

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1000  
C-rod trav.mm : 12.90...13.00  
2nd speed 1/min : 400  
C-rod trav.mm : 13.10...13.20  
3rd speed 1/min : 300  
C-rod trav.mm : 13.30...13.80

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 1000  
Pressure hPa : 700  
Contr.-rod trav.mm: 12.60...12.70

#### Measurement

Speed 1/min : 1000  
1st pressure hPa : 300  
C-rod trav.mm : 12.30...12.40  
2nd pressure hPa : 260  
C-rod trav.mm : 11.70...11.90  
3rd pressure hPa : -  
C-rod trav.mm : 11.50...11.60

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -  
Speed 1/min : 600  
Del.quantity cm3/ : 85.5...86.5  
1000H.: (83.5...88.5)

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 I 3  
 Edition : 12.09.86  
 Superceeded : 1.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 165  
 Injection pump  
 Pump designation : PE6A90D410RS2524  
 EP type number : 0 410 696 179  
 Governor  
 Governor design. : RSV250...750A7B2124L  
 Governor no. : 0 420 232 257

Customer-spec. information  
 Customer : DAF

Engine : DH 825

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.30...2.40  
 : (2.25...2.45)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 Difference ° CS : 4.50...5.50

## BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 9.70...9.80

Del.quantity cm3/ : 8.2...8.4

100H.: (8.0...8.6)

Dispersion cm3/ : 0.4

100H.: (0.5)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.3...6.5

Del.quantity cm3/ : 1.9...2.5

100H.: (1.7...2.7)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 4.50

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 750

Del.quantity cm3/ : 82.5...84.5

1000H.: (80.5...86.5)

Dispersion cm3/ : 4.00

1000H.: (5.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 41...49

Testing:

1st c-rod trav.mm : 8.70

Speed 1/min : 770...780

2nd c-rod trav.mm : 4.00

Speed 1/min : 785...805

3rd c-rod trav.mm : 0.30...1.70  
Speed 1/min : 955

LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.4

Speed 1/min : 250

C-rod trav.mm : 6.30...6.50

C-rod trav.mm : 2.00

Speed 1/min : 260...320

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

Remarks:

APPLICATION

Generator

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 N  
Edition : 12.09.86  
Superceeded : 9.84  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 676 166  
  
Injection pump  
Pump designation : PE6A95D410RS2575  
EP type number : 0 410 696 984  
Governor  
Governor design. : RSV250...750A7B2124L  
Governor no. : 0 420 232 257

Customer-spec. information  
Customer : DAF

Engine : DU 825  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
                  : (1.95...2.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
& c-rod trav max. : 21.0  
Difference ° CS : 3.00...4.00

## BASIC SETTING

1st speed 1/mi: 750  
-----  
Contr.-rod trav.mm: 12.50...12.60  
-----  
Del.quantity cm3/ : 10.0...10.2  
-----  
100H.: (9.8...10.4)  
-----  
Dispersion cm3/ : 0.4  
-----  
100H.: (0.7)  
-----  
2nd speed 1/min: 250.0  
Contr.-rod trav. m: 6.0...6.2  
Del.quantity cm3/ : 0.7...1.3  
100H.: (0.4...1.5)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...1.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 750  
Del.quantity cm3/ : 100.5...102.5  
1000H.: (98.5...104.5)  
Dispersion cm3/ : 4.00  
1000H.: (7.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 36...44

Testing:  
1st c-rod trav.mm : 11.50  
Speed 1/min : 770...780  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 785...805  
4th speed 1/min : 955

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 11...19

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.1

Speed 1/min : 250

C-rod trav.mm : 6.00...6.20

C-rod trav.mm : 2.00

Speed 1/min : 260...320

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 750

C-rod trav.mm : 12.50...12.60

2nd speed 1/min : 700

C-rod trav.mm : 12.50...12.80

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 I 2  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 169  
 Injection pump  
 Pump designation : PE6A90D320RS2547  
 EP type number : 0 410 696 180  
 Governor  
 Governor design. : RSV250...1200A5B2133  
 R  
 Governor no. : 0 420 233 138

Customer-spec. information  
 Customer : DAF

Engine : DT615

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30  
 : (2.15...2.35)  
 Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 Difference<sup>0</sup> CS : 2.50...3.50

## BASIC SETTING

1st speed 1/mi: 1000  
 -----  
 Contr.-rod trav.mm: 10.80...10.90  
 -----  
 Del.quantity cm3/ : 7.1...7.2  
 -----  
 100H.: (6.9...7.4)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.4)  
 -----

2nd speed 1/min: 250.0  
 Contr.-rod trav. m: 5.9...6.1  
 Del.quantity cm3/ : 0.9...1.3  
 100H.: (0.7...1.5)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...1.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1000  
 Charge press. hPa : 700  
 Del.quantity cm3/ : 71.5...72.5  
 1000H.: (69.5...74.5)  
 Dispersion cm3/ : 3.00  
 1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 50...58

Testing:  
 1st c-rod trav.mm : 9.80  
 Speed 1/min : 1240...1250  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1270...1300  
 3rd c-rod trav.mm : 4.00

Speed 1/min : 1310...1340  
4th speed 1/min : 1490  
C-rod trav.mm : 0.30...1.70

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 18...26  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 5.5

#### Testing:

Speed 1/min : 100  
Speed 1/min : 250  
C-rod trav.mm : 5.90...6.10  
C-rod trav.mm : 2.00  
Speed 1/min : 585...645

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1000  
C-rod trav.mm : 10.80...10.90  
2nd speed 1/min : 400  
C-rod trav.mm : 11.00...11.10  
3rd speed 1/min : 300  
C-rod trav.mm : 11.20...11.70

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 1000  
Pressure hPa : 700  
Contr.-rod trav.mm: 10.80...10.90

#### Measurement

Speed 1/min : 1000  
1st pressure hPa : -  
C-rod trav.mm : 9.80...10.00  
2nd pressure hPa : 250  
C-rod trav.mm : 10.60...10.70  
3rd pressure hPa : 210  
C-rod trav.mm : 10.10...10.40

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -  
Speed 1/min : 600  
Del.quantity cm3/ : 51.5...53.5  
1000H.: (49.5...55.5)

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 I 5  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 174  
 Injection pump  
 Pump designation : PE6A90D41ORS2524  
 EP type number : 0 410 696 179  
 Governor  
 Governor design. : RSV250...1200ASC2198  
 L  
 Governor no. : 0 420 232 441  
 Customer-spec. information  
 Customer : DAF  
 Engine : DH825

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000  
 Inlet press., bar : 1.50  
 Calibrating nozzle-holder  
 assembly : 0 681 343 009  
 Opening  
 pressure, bar : 172...175  
 Test inj. tubing : 1 680 750 015  
 Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x1.50x600  
 (A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27  
 Prestroke mm : 2.30...2.40  
 : (2.25...2.35)  
 Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + - <sup>o</sup> : 0.50 (0.75)

SD mark cyl. no. : 1

#### START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
Difference <sup>o</sup> CS : 4.50...5.50

#### BASIC SETTING

1st speed 1/mi: 1000  
-----  
Contr.-rod trav.mm: 9.40...9.50  
-----  
Del.quantity cm3/ : 7.1...7.2  
-----  
100H.: (6.9...7.4)  
-----  
Dispersion cm3/ : 0.3  
-----  
100H.: (0.4)  
-----  
2nd speed 1/min: 250.0  
Contr.-rod trav. m: 6.5...6.7  
Del.quantity cm3/ : 0.9...1.5  
100H.: (0.7...1.7)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

#### SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload  
Notch setting x : 3.25

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1000  
Del.quantity cm3/ : 71.0...72.0  
1000H.: (69.0...74.0)  
Dispersion cm3/ : 3.00  
1000H.: (4.50)

#### HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 46...54

Testing:  
1st c-rod trav.mm : 8.40  
Speed 1/min : 1240...1250  
2nd c-rod trav.mm : 4.00

Speed 1/min : 1260...1290  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1260...1290  
4th speed 1/min : 1475  
C-rod trav.mm : 0.30...1.40  
5th speed 1/min : 1310...1340  
C-rod trav.mm : 4.00

#### LOWEST RATED SPEED

Control-lever  
position degrees: 13...21  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 5.5  
Speed 1/min : 250  
C-rod trav.mm : 5.90...6.10  
C-rod trav.mm : 2.00  
Speed 1/min : 570...630

#### TORQUE CONTROL

Dimension a mm : 0.30  
Torque-control curve - 1st version  
1st speed 1/min : 1000  
C-rod trav.mm : 9.40...9.50  
2nd speed 1/min : 400  
C-rod trav.mm : 9.40...9.60  
3rd speed 1/min : 300  
C-rod trav.mm : 9.70...10.20

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 N 5  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 175  
 Injection pump  
 Pump designation : PE6A95D410RS2575  
 EP type number : 0 410 696 984  
 Governor  
 Governor design. : RSV250...1200A5C2198  
 -1L  
 Governor no. : 0 420 232 442

Customer-spec. information  
 Customer : DAF

Engine : DH 825  
 Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000  
 Inlet press., bar : 1.50  
 Calibrating nozzle-holder  
 assembly : 0 681 343 009  
 Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 Difference °CS : 3.00...4.00

## BASIC SETTING

1st speed 1/mi: 1200  
 -----  
 Contr.-rod trav.mm: 10.40...10.50  
 -----  
 Del.quantity cm3/ : 7.3...7.5  
 -----  
 100H.: (7.1...7.7)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.6)  
 -----

2nd speed 1/min: 250.0  
 Contr.-rod trav. m: 6.1...6.3  
 Del.quantity cm3/ : 0.7...1.1  
 100H.: (0.4...1.3)  
 Dispersion cm3/ : 0.3  
 100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 5.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1200  
 Del.quantity cm3/ : 73.0...75.0  
 100QH.: (71.0...77.0)  
 Dispersion cm3/ : 3.50  
 100QH.: (6.00)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 49...57

Testing:  
 1st c-rod trav.mm : 9.40  
 Speed 1/min : 1240...1250

2nd c-rod trav.mm : 4.00  
Speed 1/min : 1300...1330  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1340...1370  
4th speed 1/min : 1505  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 16...24  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 5.7  
Speed 1/min : 250  
C-rod trav.mm : 6.10...6.30  
C-rod trav.mm : 2.00  
Speed 1/min : 655...715

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1200  
C-rod trav.mm : 10.40...10.50  
2nd speed 1/min : 500  
C-rod trav.mm : 11.20...11.30  
3rd speed 1/min : 800  
C-rod trav.mm : 11.10...11.20  
4th speed 1/min : 940  
C-rod trav.mm : 10.70...11.00

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800  
Del.quantity cm3/ : 74.5...77.5  
1000H.: (72.0...80.0)

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 K 8  
 Edition : 05.11.86  
 Superceeded : 12.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 176  
 Injection pump  
 Pump designation : PE6A95D410RS2525  
 EP type number : 0 410 696 987  
 Governor  
 Governor design. : RSV250...1200A5C2199  
 Governor no. : 0 420 232 443

Customer-spec. information  
 Customer : DAF

Engine : DHTD 825

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.15)  
 Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 & c-rod trav max. : 21.0  
 Difference ° CS : 3.00...4.00

## BASIC SETTING

1st speed 1/mi: 1000  
 -----  
 Contr.-rod trav.mm: 12.60...12.70  
 -----  
 Del.quantity cm3/ : 10.9...11.0  
 -----  
 100H.: (10.7...11.2)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.6)  
 -----  
 2nd speed 1/min: 250.0  
 Contr.-rod trav. m: 6.0...6.2  
 Del.quantity cm3/ : 0.7...1.1  
 100H.: (0.4...1.3)  
 Dispersion cm3/ : 0.3  
 100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 4.25

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1000  
 Charge press. hPa : 700  
 Del.quantity cm3/ : 109.0...110.0  
 1000H.: (107.0...112.0)  
 Dispersion cm3/ : 3.50  
 1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 51...59

Testing:  
 1st c-rod trav.mm : 11.60

Speed 1/min : 1230...1240  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1290...1320  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1310...1340  
4th speed 1/min : 1490  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 17...25  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 5.6  
Speed 1/min : 250  
C-rod trav.mm : 6.00...6.20  
C-rod trav.mm : 2.00  
Speed 1/min : 445...505

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1000  
C-rod trav.mm : 13.40...13.50  
2nd speed 1/min : 400  
C-rod trav.mm : 13.60...13.70  
3rd speed 1/min : 300  
C-rod trav.mm : 13.80...14.30

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 600  
Pressure hPa : 700  
Contr.-rod trav.mm: 12.60...12.70

#### Measurement

Speed 1/min : 600  
C-rod trav.mm : 11.50...11.60  
2nd pressure hPa : 300  
C-rod trav.mm : 12.30...12.40  
3rd pressure hPa : 260  
C-rod trav.mm : 11.70...11.90

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 85.5...86.5  
1000H.: (83.5...88.5)

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 K 3  
 Edition : 28.10.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 177  
 Injection pump  
 Pump designation : PE6A85D32ORS2546  
 EP type number : 0 410 686 943  
 Governor  
 Governor design. : RSV250...1300A1C2200  
 Governor no. : 0 420 233 201  
 Customer-spec. information  
 Customer : DAF  
 Engine : DF615

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000  
 Inlet press., bar : 1.50  
 Calibrating nozzle-holder  
 assembly : 0 681 343 009  
 Opening  
 pressure, bar : 172...175  
 Test inj. tubing : 1 680 750 015  
 Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x1.50x600  
 (A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27  
 Prestroke mm : 2.15...2.25  
 : (2.10...2.30)  
 Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

#### START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
& c-rod tray max. : 21.0  
Difference<sup>o</sup> CS : 3.00...4.00

#### BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 10.40...10.50

Del.quantity cm3/ : 5.6...5.7

100H.: (5.4...5.9)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 8.3...8.5

Del.quantity cm3/ : 1.4...1.9

100H.: (1.2...2.1)

Dispersion cm3/ : 0.2

100H.: (0.4)

#### SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 56.0...57.0

1000H.: (54.0...59.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 65...73

Testing:

1st c-rod trav.mm : 9.40

Speed 1/min : 1340...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1355...1385

3rd c-rod trav.mm : 4.00

Speed 1/min : 1370...1400

4th speed 1/min : 1540

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 18...26

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 5.5

Speed 1/min : 250

C-rod trav.mm : 5.40...5.60

C-rod trav.mm : 2.00

Speed 1/min : 460...520

#### TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 10.40...10.50

2nd speed 1/min : 400

C-rod trav.mm : 10.40...10.60

3rd speed 1/min : 300

C-rod trav.mm : 10.70...11.20

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 N 7  
 Edition : 12.09.86  
 Superseded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 178  
 Injection pump  
 Pump designation : PE6A9SD410RS2575  
 EP type number : 0 410 696 984  
 Governor  
 Governor design. : RSV250...750A7C2201L  
 Governor no. : 0 420 232 444

Customer-spec. information  
 Customer : DAF

Engine : DHTD 825

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness : 6.00x1.50x600  
 x Length mm

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 Difference °CS : 3.00...4.00

## BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm3/ : 11.0...11.2

100H.: (10.8...11.4)

Dispersion cm3/ : 0.4

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/ : 0.7...1.3

Dispersion cm3/ : 0.2

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 750

Del.quantity cm3/ : 110.5...112.5

1000H.: (108.5...114.5)

Dispersion cm3/ : 4.00

1000H.: (6.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 35...44

Testing:

1st c-rod trav.mm : 12.20

Speed 1/min : 770...780

2nd c-rod trav.mm : 4.00

Speed 1/min : 785...805

4th speed 1/min : 955

C-rod trav.mm : 0.30...1.70

## LOWEST RATED SPEED I

Control-lever

position degrees: 12...20  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 6.1  
Speed 1/min : 250  
C-rod trav.mm : 6.00...6.20  
C-rod trav.mm : 2.00  
Speed 1/min : 240...300

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 750

C-rod trav.mm : 12.50...12.60

2nd speed 1/min : 700

C-rod trav.mm : 12.50...12.80

Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 I 6  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 180  
 Injection pump  
 Pump designation : PE6A90D320RS2547  
 EP type number : 0 410 696 180  
 Governor  
 Governor design. : RSV250...1200A5C2203  
 R  
 Governor no. : 0 420 233 203

Customer-spec. information  
 Customer : DAF

Engine : DT615

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30  
 : (2.15...2.35)  
 Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 Difference<sup>0</sup> CS : 2.50...3.50

## BASIC SETTING

1st speed 1/mi: 1000  
 -----  
 Contr.-rod trav.mm: 10.80...10.90  
 -----  
 Del.quantity cm3/ : 7.1...7.2  
 -----  
 100H.: (6.9...7.4)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.4)  
 -----  
 2nd speed 1/min: 250.0  
 Contr.-rod trav. m: 5.9...6.1  
 Del.quantity cm3/ : 0.9...1.3  
 100H.: (0.7...1.5)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 3.25

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1000  
 Charge press. hPa : 700  
 Del.quantity cm3/ : 71.5...72.5  
 1000H.: (69.5...74.5)  
 Dispersion cm3/ : 3.00  
 1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 47...55

Testing:  
 1st c-rod trav.mm : 9.80  
 Speed 1/min : 1240...1250

2nd c-rod trav.mm : 4.00  
Speed 1/min : 1270...1300  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1305...1335  
4th speed 1/min : 1490  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 13...21  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 5.5  
Speed 1/min : 250  
C-rod trav.mm : 5.90...6.10  
C-rod trav.mm : 2.00  
Speed 1/min : 560...620

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1000  
C-rod trav.mm : 11.10...11.20  
2nd speed 1/min : 400  
C-rod trav.mm : 11.30...11.40  
5th speed 1/min : 300  
C-rod trav.mm : 11.50...12.00

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 600  
Pressure hPa : 700  
Contr.-rod trav.mm: 10.80...10.90

#### Measurement

Speed 1/min : 600  
1st pressure hPa : -  
C-rod trav.mm : 9.80...10.00  
2nd pressure hPa : 250  
C-rod trav.mm : 10.60...10.70  
3rd pressure hPa : 210  
C-rod trav.mm : 10.10...10.40

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -  
Speed 1/min : 600  
Del. quantity cm3/ : 51.5...53.5  
1000H.: (49.0...56.0)

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 M 3  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 181  
 Injection pump  
 Pump designation : PE6A85D32ORS2546  
 EP type number : 0 410 686 943  
 Governor  
 Governor design. : RSV250...750A7C2202R  
 Governor no. : 0 420 233 202

Customer-spec. information  
 Customer : DAF

Engine : DF615

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness : 6.00X1.50X600  
 x Length mm

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values \_\_\_\_\_

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25  
 : (2.10...2.30)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + -<sup>o</sup> : 0.50 (0.75)

SD mark cyl. no. : 1

#### START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
Difference<sup>o</sup> CS : 3.00...4.00

#### BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 6.7...6.9

100H.: (6.5...7.1)

Dispersion cm3/ : 0.3

100H.: (0.5)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 8.4...8.6

Del.quantity cm3/ : 0.9...1.5  
100H.: (0.7...1.7)

Dispersion cm3/ : 0.2

100H.: (0.4)

#### SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 3.50

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 750

Del.quantity cm3/ : 67.0...69.0  
1000H.: (65.0...71.0)

Dispersion cm3/ : 3.00

1000H.: (5.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 36...44

Testing:

1st c-rod trav.mm : 11.1

Speed 1/min : 770...780

2nd c-rod trav.mm : 4.00

Speed 1/min : 785...805

4th speed 1/min : 955.0

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 8.5

Speed 1/min : 250

C-rod trav.mm : 8.40...8.60

C-rod trav.mm : 2.00

Speed 1/min : 260...320

#### SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 I 6  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 676 182  
Injection pump  
Pump designation : PE6A90D410RS2524  
EP type number : 0 410 696 179  
Governor  
Governor design. : RSV250...750A7C2201L  
Governor no. : 0 420 232 444

Customer-spec. information  
Customer : DAF

Engine : DH 825

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.30...2.40  
: (2.25...2.45)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
Difference ° CS : 4.50...5.50

## BASIC SETTING

1st speed 1/mi: 750  
Contr.-rod trav.mm: 9.70...9.80  
Del.quantity cm3/ : 8.2...8.4  
100H.: (8.0...8.6)  
Dispersion cm3/ : 0.4  
100H.: (0.5)

2nd speed 1/min: 250.0  
Contr.-rod trav. m: 6.3...6.5  
Del.quantity cm3/ : 1.9...2.5  
100H.: (1.7...2.7)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Cont.-rod travelmm: 0.30...1.00

Governor-spring reload  
Notch setting x : 4.50

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 750  
Del.quantity cm3/ : 82.5...84.5  
1000H.: (80.5...86.5)  
Dispersion cm3/ : 4.00  
1000H.: (5.50)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 41...49

Testing:  
1st c-rod trav.mm : 8.70  
Speed 1/min : 770...780  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 785...805

4th speed 1/min : 955  
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.4

Speed 1/min : 250

C-rod trav.mm : 6.30...6.50

C-rod trav.mm : 2.00

Speed 1/min : 260...320

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 N 6  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 676 185  
 Injection pump  
 Pump designation : PE6A95D410RS2525  
 EP type number : 0 410 696 987  
 Governor  
 Governor design. : RSV250...1200ASC2198  
 -3L  
 Governor no. : 0 420 232 452

Customer-spec. information  
 Customer : DAF

Engine : DH 825  
 Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000  
 Inlet press., bar : 1.50  
 Calibrating nozzle-holder  
 assembly : 0 681 343 009  
 Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27  
 Prestroke mm : 2.00...2.10  
 : (1.95...2.15)  
 Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

C07

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 & c-rod trav max. : 21.0  
 Difference ° CS : 3.00...4.00

## BASIC SETTING

1st speed 1/mi: 1200  
 -----  
 Contr.-rod trav.mm: 10.40...10.50  
 -----  
 Del.quantity cm3/ : 7.3...7.5  
 -----  
 100H.: (7.1...7.7)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.6)  
 -----  
 2nd speed 1/min: 250.0  
 Contr.-rod trav. m: 6.0...6.2  
 Del.quantity cm3/ : 0.7...1.1  
 100H.: (0.4...1.3)  
 Dispersion cm3/ : 0.3  
 100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 5.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1200  
 Del.quantity cm3/ : 73.0...75.0  
 1000H.: (71.0...77.0)  
 Dispersion cm3/ : 3.50  
 1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 49...57

Testing:  
 1st c-rod trav.mm : 9.40

Speed 1/min : 1240...1250  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1280...1310  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1340...1370  
4th speed 1/min : 1505  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 16...24  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 5.6

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 250  
C-rod trav.mm : 6.00...6.20  
C-rod trav.mm : 2.00  
Speed 1/min : 655...715

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1200  
C-rod trav.mm : 10.40...10.50  
2nd speed 1/min : 500  
C-rod trav.mm : 11.20...11.30  
3rd speed 1/min : 800  
C-rod trav.mm : 11.10...11.20  
4th speed 1/min : 940  
C-rod trav.mm : 10.70...11.00

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800  
Del.quantity cm3/ : 75.0...77.0  
1000H.: (72.5...79.5)

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-1-420/114.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 4,1 E 1  
Edition : 12.09.86  
Superceeded : 1.86  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 834 002  
  
Injection pump  
Pump designation : PES4A85D410/3RS2707  
EP type number : 0 410 884 948  
Governor  
Governor design. : RQV300...1250AB1089-1L  
Governor no. : 0 420 212 185  
  
Customer-spec. information  
Customer : KHD  
  
Engine : BF4L913T  
  
1st version kW : 64.0  
Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000  
  
Inlet press., bar : 1.00  
  
Calibrating nozzle-holder  
assembly : 0 681 343 009  
  
Opening  
pressure, bar : 172...175  
  
Test inj. tubing : 1 680 750 014  
  
Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27  
  
Prestroke mm : 2.50...2.60  
                  : (2.45...2.65)

C09

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1250  
-----  
Contr.-rod trav.mm: 12.00...12.10  
-----  
Del.quantity cm3/ : 6.9...7.0  
-----  
100H.: (6.7...7.2)  
-----  
Dispersion cm3/ : 0.3  
-----  
100H.: (0.4)  
-----  
2nd speed 1/min: 300.0  
Contr.-rod trav. m: 4.9...5.1  
Del.quantity cm3/ : 1.0...1.6  
100H.: (0.8...1.8)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 250  
Sleeve travel mm: 0.50...0.70  
2nd speed 1/min: 450  
Sleeve travel mm: 3.10...3.30  
3rd speed 1/min: 800  
Sleeve travel mm: 4.60...4.70  
4th speed 1/min: 1100  
Sleeve travel mm: 6.60...6.80  
5th speed 1/min: 1300  
Sleeve travel mm: 8.60...8.70

## SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 1290  
Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1250  
Del.quantity cm3/ : 69.5...70.5  
1000H.: (67.5...72.5)  
Dispersion cm3/ : 3.00  
1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 62...70

Testing:

1st c-rod trav.mm : 11.00  
Speed 1/min : 1290...1300  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1375...1405  
4th speed 1/min : 1500  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever  
position degrees: 6...14

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 6.40  
Speed 1/min : 300  
C-rod trav.mm : 4.90...5.10  
C-rod trav.mm : 2.00  
Speed 1/min : 355...415

TORQUE CONTROL

Dimension a mm : 0.35  
Torque-control curve - 1st version  
1st speed 1/min : 1250  
C-rod trav.mm : 12.00...12.10  
2nd speed 1/min : 650  
C-rod trav.mm : 12.60...12.70  
3rd speed 1/min : 915  
C-rod trav.mm : 12.40...12.60  
4th speed 1/min : 985  
C-rod trav.mm : 12.00...12.30

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 650  
Del.quantity cm<sup>3</sup>/ : 58.5...60.5  
1000H.: (56.0...63.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD S,1 G  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 835 007  
Injection pump  
Pump designation : PESSA80D410/3RS2555  
EP type number : 0 410 885 006  
Governor  
Governor design. : RQ275/1400AB798DL  
Governor no. : 0 420 202 239

Customer-spec. information  
Customer : KHD

Engine : F5L912

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00  
: (1.85...2.05)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 5- 4- 2

SD ang. spacing°CS: 0-72-144-216-288  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1400  
Contr.-rod trav.mm: 11.60...11.70  
Del.quantity cm3/ : 6.5...6.6  
100H.: (6.3...6.7)  
Dispersion cm3/ : 0.2  
100H.: (0.4)  
2nd speed 1/min: 275.0  
Contr.-rod trav. m: 8.2...8.4  
Del.quantity cm3/ : 0.9...1.5  
100H.: (0.7...1.6)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 650  
Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1400  
Del.quantity cm3/ : 65.0...66.0  
1000H.: (63.5...67.5)  
Dispersion cm3/ : 2.50  
1000H.: (4.00)

## HIGHEST RATED SPEED

Setting point:  
Speed 1/min : 650  
Contr.-rod trav.mm: 16.0

Testing:  
1st c-rod trav.mm : 10.60  
Speed 1/min : 1445...1460  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1535...1565  
4th speed 1/min : 1650  
C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Setting point w/out aux. spring  
Speed 1/min : 275  
Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 7.00  
Speed 1/min : 275  
C-rod trav.mm : 5.40...5.60  
C-rod trav.mm : 2.00  
Speed 1/min : 430...470  
Speed 1/min : 550  
C-rod trav.mm max : 1.00

#### TORQUE CONTROL

Dimension a mm : 0.65  
Torque-control curve - 1st version  
1st speed 1/min : 1400  
C-rod trav.mm : 11.60...11.70  
2nd speed 1/min : 650  
C-rod trav.mm : 13.00...13.20  
3rd speed 1/min : 810  
C-rod trav.mm : 12.60...12.80  
4th speed 1/min : 1015  
C-rod trav.mm : 11.80...12.10

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 6,1 A 2  
Edition : 12.09.86  
Superceeded : 4.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 836 016  
  
Injection pump  
Pump designation : PES6A85D410/3RS2415  
EP type number : 0 410 886 915  
Governor  
Governor design. : RQV750AB1004L  
Governor no. : 0 420 212 093

Customer-spec. information  
Customer : KHD

Engine : BF6L913

1st version kW : 70.0  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 415 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00  
: (1.85...2.05)  
Contr.-rod trav.mm: 9.00...12.00

C13

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 720  
Contr.-rod trav.mm: 12.30...12.40  
Del.quantity cm3/ : 8.4...8.5  
100H.: (8.2...8.7)  
Dispersion cm3/ : 0.3  
100H.: (0.5)

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 720  
Del.quantity cm3/ : 84.0...85.0  
1000H.: (82.0...87.0)  
Dispersion cm3/ : 3.00  
1000H.: (5.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 21...29

Testing:  
1st c-rod trav.mm : 11.30  
Speed 1/min : 760...765  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 789...799  
4th speed 1/min : 820  
C-rod trav.mm : 0.00...1.00

## SWITCH-OVER POINT

Speed 1/min : 660

Remarks:  
A output

## APPLICATION

Generator set



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 6,1 0  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 836 019  
  
Injection pump  
Pump designation : PES6A80D410/3RS2527  
EP type number : 0 410 886 059  
Governor  
Governor design. : RQ300/1250AB935-2L  
Governor no. : 0 420 200 107

Customer-spec. information  
Customer : KHD

Engine : F6L912

1st version kW : 89.0  
Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 5 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00  
: (1.85...2.05)

Contr.-rod trav.mm: 9.00...12.00

C15

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1250  
-----  
Contr.-rod trav.mm: 12.50...12.60  
-----  
Del.quantity cm3/ : 6.6...6.7  
-----  
100H.: (6.5...6.9)  
-----  
Dispersion cm3/ : 0.2  
-----  
100H.: (0.3)  
-----

2nd speed 1/min: 300.0  
Contr.-rod trav. m: 8.9...9.1  
Del.quantity cm3/ : 0.7...1.3  
Dispersion cm3/ : 0.2

## SLEEVE POSITION

Control-lever position  
Degree: -2  
Speed 1/min: 800  
Contr.-rod travelmm: 19.20...20.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1250  
Del.quantity cm3/ : 66.5...67.5  
1000H.: (65.0...69.0)  
Dispersion cm3/ : 2.50  
1000H.: (3.50)

## HIGHEST RATED SPEED

Setting point:  
Speed 1/min : 800  
Contr.-rod trav.mm: 20.0

Testing:  
1st c-rod trav.mm : 11.50  
Speed 1/min : 1295...1310  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1375...1405

## LOWEST RATED SPEED I

Setting point w/out aux. spring  
Speed 1/min : 300  
Contr.-rod trav.mm: 8.5

Testing:  
Speed 1/min : 100

C-rod trav.mm min : 9.50  
Speed 1/min : 300  
C-rod trav.mm : 8.40...8.60  
C-rod trav.mm : 2.00  
Speed 1/min : 605...645

#### TORQUE CONTROL

Dimension a mm : 1.30  
Torque-control curve - 1st version  
1st speed 1/min : 1250  
C-rod trav.mm : 12.50...12.60  
2nd speed 1/min : 800  
C-rod trav.mm : 13.80...13.90  
3rd speed 1/min : 910  
C-rod trav.mm : 13.40...13.60  
4th speed 1/min : 1045  
C-rod trav.mm : 12.70...13.00

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800  
Del.quantity cm<sup>3</sup>/ : 71.5...73.5

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 11,1P22  
 Edition : 12.09.86  
 Superseded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 836 029  
 Injection pump  
 Pump designation : PES6A95D410LS2542-1  
 EP type number : 0 410 896 912  
 Governor  
 Governor design. : RQ250/1100AB1137-2L  
 Governor no. : 0 420 200 084

Customer-spec. information  
 Customer : MAN

Engine : D2566M/MF

1st version kW : 177.0  
 Speed 1/min: 2200

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60  
 : (1.45...1.65)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 12.4...12.6

100H.: (12.2...12.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.5...6.7

Del.quantity cm3/ : 0.8...1.4

100H.: (0.5...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 124.5...126.5

1000H.: (122.5...128.5)

Dispersion cm3/ : 3.00

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1205...1235

## LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 7.50  
Speed 1/min : 250  
C-rod trav.mm : 5.90...6.10  
C-rod trav.mm : 2.00  
Speed 1/min : 360...400

TORQUE CONTROL

Dimension a mm : -  
Torque-control curve - 1st version  
1st speed 1/min : 1100  
C-rod trav.mm : 12.00...12.10  
2nd speed 1/min : 600  
C-rod trav.mm : 12.00...12.20

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 107.5...113.5  
1000H.: (105.0...116.0)  
Speed 1/min : 750  
Del.quantity cm3/ : 113.0...116.0  
1000H.: (110.5...118.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 11,4 B3  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 836 031  
Injection pump  
Pump designation : PES6A95D410LS2639-2  
EP type number : 0 410 896 910  
Governor  
Governor design. : RQ250/1100AB1137-9L  
Governor no. : 0 420 200 091

Customer-spec. information  
Customer : MAN

Engine : D2566MF/200

1st version kW : 162.0  
Speed 1/min: 2200

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60  
: (1.45...1.55)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 14.30...14.50

Del.quantity cm3/ : 13.0...13.4

100H.: (12.8...13.4)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.4...7.6

Del.quantity cm3/ : 1.0...1.6

100H.: (0.7...1.8)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 130.0...132.0

1000H.: (128.0...134.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 11.80

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.50

Speed 1/min : 250

C-rod trav.mm : 5.90...6..10

C-rod trav.mm : 2.00

Speed 1/min : 360...400

TORQUE CONTROL

Dimension a mm : 0.60

Torque-control curve - 1st version

1st speed 1/min : 1100

C-rod trav.mm : 12.80...12.90

2nd speed 1/min : 600

C-rod trav.mm : 14.30...14.40

3rd speed 1/min : 865

C-rod trav.mm : 13.80...14.00

4th speed 1/min : 940

C-rod trav.mm : 13.10...13.30

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 130.0...133.0

1000H.: (127.5...135.5)

Speed 1/min : 1100

Del.quantity cm3/ : 122.0...126.0

1000H.: (119.5...128.5)

Remarks:

: MAN-NR. 2-7729

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 6,1 N  
 Edition : 14.11.86  
 Superseded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 836 034  
 Injection pump  
 Pump designation : PES6A85D410/3RS2730  
 EP type number : 0 410 886 897  
 Governor  
 Governor design. : RQV300...1250AB1188-1L  
 Governor no. : 0 420 212 205

Customer-spec. information  
 Customer : KHD

Engine : BF6L913

1st version kW : 110.0  
 Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness : 6.00X2.00X600  
 x Length mm

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30  
 : (2.15...2.35)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm3/ : 8.4...8.5

100H.: (8.2...8.7)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.9...6.1

Del.quantity cm3/ : 1.0...1.6

100H.: (0.8...1.8)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.20...1.30

2nd speed 1/min: 370

Sleeve travel mm: 2.30...2.60

3rd speed 1/min: 540

Sleeve travel mm: 3.20...3.80

4th speed 1/min: 1290

Sleeve travel mm: 8.50...8.70

5th speed 1/min: 1335

Sleeve travel mm: 9.50...9.70

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1290

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Charge press. hPa : 900

Del.quantity cm3/ : 84.5...85.5

1000H.: (82.5...87.5)

Dispersion cm3/ : 3.00

1000H.: (4.50)

### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

#### Testing:

1st c-rod trav.mm : 12.20

Speed 1/min : 1290...1300

2nd c-rod trav.mm : 4.00

Speed 1/min : 1385...1415

4th speed 1/min : 1550

C-rod trav.mm : 0.00...1.00

### LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.50

Speed 1/min : 300

C-rod trav.mm : 5.90...6.10

### CONSTANT REGULATION

Speed 1/min : 360...470

### TORQUE CONTROL

Dimension a mm : 0.80

Torque-control curve - 1st version

1st speed 1/min : 1250

C-rod trav.mm : 13.20...13.30

2nd speed 1/min : 500

C-rod trav.mm : 14.00...14.10

3rd speed 1/min : 740

C-rod trav.mm : 13.70...13.90

4th speed 1/min : 850

C-rod trav.mm : 13.40...13.50

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 13.40...13.50

#### Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.80...11.90

2nd pressure hPa : 425

C-rod trav.mm : 12.90...13.00

3rd pressure hPa : 320

C-rod trav.mm : 12.10...12.30

### SWITCH-OVER POINT

Speed 1/min : 220 (240)

### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : 900

Speed 1/min : 850

Del.quantity cm3/ : 81.0...83.0

1000H.: (78.5...85.5)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 54.5...56.5

1000H.: (52.5...58.5)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 1  
 Edition : 12.09.86  
 Superceeded : 7.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 844 084  
 Injection pump  
 Pump designation : PES4A90D41ORS2666  
 EP type number : 0 410 894 029  
 Governor  
 Governor design. : RQV300...1400AB1201-1L  
 Governor no. : 0 420 212 176

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 55.0  
 Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
 : (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing<sup>o</sup>CS: 0-90-180-270  
Tolerance + - : 0.50 (0.75)

#### BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 10.90...11.00

Del.quantity cm3/ : 6.3...6.4

100H.: (6.1...6.6)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.6...8.8

Del.quantity cm3/ : 0.8...1.2

100H.: (0.6...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with  
externally-mounted governor

#### SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.80...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.30...2.80

3rd speed 1/min: 750

Sleeve travel mm: 4.10...4.30

4th speed 1/min: 1500

Sleeve travel mm: 8.50...8.60

#### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1500

Contr.-rod travelmm: 15.20...17.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 63.5...64.5

1000H.: (61.5...66.5)

Dispersion cm3/ : 3.00

1000H.: (4.50)

#### HIGHEST RATED SPEED

1st version

Control-lever  
position degrees: 59...67

#### Testing:

1st c-rod trav.mm : 9.90

Speed 1/min : 1440...1450

2nd c-rod trav.mm : 4.00

Speed 1/min : 1550...1580

4th speed 1/min : 1630

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 20...28

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.20

Speed 1/min : 300

C-rod trav.mm : 8.60...8.80

#### CONSTANT REGULATION

Speed 1/min : 540...680

#### TORQUE CONTROL

Dimension a mm : 1.00

Torque-control curve - 1st version

1st speed 1/min : 1400

C-rod trav.mm : 10.90...11.00

2nd speed 1/min : 500

C-rod trav.mm : 11.90...12.00

3rd speed 1/min : 700

C-rod trav.mm : 11.60...11.90

4th speed 1/min : 900

C-rod trav.mm : 11.40...11.60

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 50.0...53.0

1000H.: (47.5...55.5)

1000H.: (5.50)

Speed 1/min : 900

Del.quantity cm3/ : 52.5...55.5

1000H.: (50.0...58.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : LIE 5,6 B  
Edition : 12.09.86  
Superceeded : 4.86  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 844 085  
  
Injection pump  
Pump designation : PES4A100D410RS2686  
EP type number : 0 410 804 001  
Governor  
Governor design. : RQV400...1000AB1203L  
Governor no. : 0 420 212 177

Customer-spec. information  
Customer : LIEBHERR

Engine : D904T

1st version kW : 100.0  
Speed 1/min: 2000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 40...45

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80  
                  : (2.65...2.85)  
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - ° : 0.50 (0.75)

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00  
Difference ° CS : 4.00...5.00

## BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 12.1...12.3

100H.: (11.9...12.5)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 400.0

Contr.-rod trav. m: 6.6...6.8

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.4)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 375  
Sleeve travel mm: 1.00...1.10

2nd speed 1/min: 600  
Sleeve travel mm: 3.70...4.00

3rd speed 1/min: 1000  
Sleeve travel mm: 7.50...7.60

4th speed 1/min: 1150  
Sleeve travel mm: 9.50...10.20

## SLEEVE POSITION

Control-lever position

Degree: 1

Speed 1/min: 1070

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 800

Del.quantity cm3/ : 121.5...123.5

1000H.: (119.5...125.5)

Dispersion cm<sup>3</sup>/ : 3.50  
1000H.: (6.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...68

Testing:

1st c-rod trav.mm : 10.40

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1110...1140

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.20

Speed 1/min : 400

C-rod trav.mm : 6.60...6.80

#### CONSTANT REGULATION

Speed 1/min : 420...530

#### TORQUE CONTROL

Dimension a mm : 1.40

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 11.40...11.50

2nd speed 1/min : 500

C-rod trav.mm : 12.80...12.90

3rd speed 1/min : 860

C-rod trav.mm : 12.30...12.50

4th speed 1/min : 920

C-rod trav.mm : 11.80...12.00

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 800

Contr.-rod trav.mm: 12.80...12.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.40...11.50

2nd pressure hPa : 700

C-rod trav.mm : 12.30...12.40

3rd pressure hPa : 655

C-rod trav.mm : 11.80...12.00

#### SWITCH-OVER POINT

Speed 1/min : 320 (340)

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : 800

Speed 1/min : 650

Del.quantity cm<sup>3</sup>/ : 130.5...132.5

1000H.: (128.0...135.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm<sup>3</sup>/ : 106.5...109.5

1000H.: (104.5...111.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 3  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 844 087  
 Injection pump  
 Pump designation : PES4A90C410RS2666  
 EP type number : 0 410 894 029  
 Governor  
 Governor design. : RQV300...1400AB1065-  
 5L  
 Governor no. : 0 420 212 169

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 66.0  
 Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
 : (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing<sup>o</sup>CS: 0-90-180-270  
Tolerance + - : 0.50 (0.75)

#### BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 10.90...11.00

Del.quantity cm3/ : 6.3...6.4

100H.: (6.1...6.6)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.6...8.8

Del.quantity cm3/ : 0.8...1.2

100H.: (0.6...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with  
externally-mounted governor

#### SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.80...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.30...2.80

3rd speed 1/min: 750

Sleeve travel mm: 4.10...4.30

4th speed 1/min: 1500

Sleeve travel mm: 8.50...8.60

#### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1500

Cont.-rod travelmm: 15.20...17.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 63.5...64.5

1000H.: (61.5...66.5)

Dispersion cm3/ : 3.00

1000H.: (4.50)

#### HIGHEST RATED SPEED

1st version

Control-lever  
position degrees: 59...67

Testing:

1st c-rod trav.mm : 9.90

Speed 1/min : 1440...1450

2nd c-rod trav.mm : 4.00

Speed 1/min : 1550...1580

4th speed 1/min : 1630

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 20...28

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.20

Speed 1/min : 300

C-rod trav.mm : 8.60...8.80

#### CONSTANT REGULATION

Speed 1/min : 540...680

#### TORQUE CONTROL

Dimension a mm : 1.00

Torque-control curve - 1st version

1st speed 1/min : 1400

C-rod trav.mm : 10.90...11.00

2nd speed 1/min : 500

C-rod trav.mm : 11.90...12.00

3rd speed 1/min : 700

C-rod trav.mm : 11.60...11.90

4th speed 1/min : 900

C-rod trav.mm : 11.40...11.60

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 50.0...53.0

1000H.: (47.5...55.5)

1000H.: (5.50)

Speed 1/min : 900

Del.quantity cm3/ : 52.5...55.5

1000H.: (50.0...58.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 2  
 Edition : 12.09.86  
 Superseded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 844 088  
 Injection pump  
 Pump designation : PES4A90D41ORS2666  
 EP type number : 0 410 894 029  
 Governor  
 Governor design. : RQV300...1400AB1065-10L  
 Governor no. : 0 420 212 203

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 66.0  
 Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
 : (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1400  
 -----  
 Contr.-rod trav.mm: 10.90...11.00  
 -----  
 Del.quantity cm3/ : 6.3...6.4  
 -----  
 100H.: (6.1...6.6)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.4)  
 -----  
 2nd speed 1/min: 300.0  
 Contr.-rod trav. m: 8.6...8.8  
 Del.quantity cm3/ : 0.8...1.2  
 100H.: (0.6...1.4)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300  
 Sleeve travel mm: 0.80...1.30  
 2nd speed 1/min: 500  
 Sleeve travel mm: 2.30...2.80  
 3rd speed 1/min: 750  
 Sleeve travel mm: 4.10...4.30  
 4th speed 1/min: 1500  
 Sleeve travel mm: 8.50...8.60

## SLEEVE POSITION

Control-lever position  
 Degree: -1  
 Speed 1/min: 1500  
 Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1400  
 Del.quantity cm3/ : 63.5...64.5  
 1000H.: (61.5...66.5)  
 Dispersion cm3/ : 3.00  
 1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever  
position degrees: 59...67

Testing:

1st c-rod trav.mm : 9.90  
Speed 1/min : 1440...1450  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1545...1575  
4th speed 1/min : 1630  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever  
position degrees: 17...25  
Setting point w/out aux. spring  
Speed 1/min : 300  
Contr.-rod trav.mm: 8.7

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 10.20  
Speed 1/min : 300  
C-rod trav.mm : 8.60...8.80

CONSTANT REGULATION

Speed 1/min : 540...680

TORQUE CONTROL

Dimension a mm : 1.00  
Torque-control curve - 1st version  
1st speed 1/min : 1400  
C-rod trav.mm : 10.90...11.00  
2nd speed 1/min : 500  
C-rod trav.mm : 11.90...12.00  
3rd speed 1/min : 700  
C-rod trav.mm : 11.60...11.90  
4th speed 1/min : 900  
C-rod trav.mm : 11.40...11.60

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm<sup>3</sup>/ : 50.0...53.0  
1000H.: (47.5...55.5)  
1000H.: (5.50)  
Speed 1/min : 900  
Del.quantity cm<sup>3</sup>/ : 52.5...55.5  
1000H.: (50.0...58.0)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 9,2 I 3  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 845 065  
Injection pump  
Pump designation : PESSA95D410LS2543  
EP type number : 0 410 895 978  
Governor  
Governor design. : RQ250/1100AB1137-3L  
Governor no. : 0 420 200 085

Customer-spec. information  
Customer : MAN

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60  
: (1.45...1.65)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 5- 4- 2

SD ang. spacing°CS: 0-72-144-216-288  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 5

## BASIC SETTING

1st speed 1/mi: 1100  
Contr.-rod trav.mm: 11.00...11.10  
Del.quantity cm3/ : 11.1...11.2  
100H.: (10.9...11.4)  
Dispersion cm3/ : 0.3  
100H.: (0.6)  
2nd speed 1/min: 250.0  
Contr.-rod trav. m: 5.9...6.1  
Del.quantity cm3/ : 0.9...1.5  
100H.: (0.6...1.7)  
Dispersion cm3/ : 0.3  
100H.: (0.5)

## SLEEVE POSITION

Speed 1/min: 600  
Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1100  
Del.quantity cm3/ : 111.5...112.5  
1000H.: (109.5...114.5)  
Dispersion cm3/ : 3.00  
1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:  
Speed 1/min : 600  
Contr.-rod trav.mm: 16.0

Testing:  
1st c-rod trav.mm : 10.00  
Speed 1/min : 1145...1160  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1185...1215

## LOWEST RATED SPEED I

Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 6.0

Testing:  
Speed 1/min : 100  
C-rod trav.mm min : 7.50  
Speed 1/min : 250

C-rod trav.mm : 5.90...6.10  
C-rod trav.mm : 2.00  
Speed 1/min : 355...395

#### TORQUE CONTROL

Dimension a mm : 0.35  
Torque-control curve - 1st version  
1st speed 1/min : 1100  
C-rod trav.mm : 11.00...11.10  
2nd speed 1/min : 500  
C-rod trav.mm : 11.70...11.80  
3rd speed 1/min : 750  
C-rod trav.mm : 11.50...11.70  
4th speed 1/min : 930  
C-rod trav.mm : 11.10...11.30

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 107.5...111.5  
1000H.: (105.0...114.0)  
Speed 1/min : 750  
Del.quantity cm3/ : 106.5...110.5  
1000H.: (104.0...113.0)  
Dispersion cm3/ : -  
1000H.: (7.00)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 9,2 I 4  
Edition : 12.09.86  
Superceeded : 9.83  
Calibrating oil : ISO-4113  
Combination no. : 0 400 845 066  
Injection pump  
Pump designation : PESSA95D410LS2543Y  
EP type number : 0 410 895 976  
Governor  
Governor design. : RQ250/1100AB1137-3L  
Governor no. : 0 420 200 085

Customer-spec. information  
Customer : MAN

Engine : D2565 M/MF

1st version kW : 123.6  
Speed 1/min: 2200

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 003

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

START OF DELIVERY  
Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60  
: (1.45...1.65)

Contr.-rod trav.mm: 9.00...12.00

D07

Cam sequence : 1- 3- 5- 4- 2

SD ang. spacing<sup>0</sup>CS: 0-72-144-216-288  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 5

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 9.2...9.4

100H.: (9.0...9.6)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.8...7.0

Del.quantity cm3/ : 0.9...1.5

100H.: (0.6...1.7)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 92.5...94.5

1000H.: (90.5...96.5)

Dispersion cm3/ : 3.00

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 9.20

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1180...1210

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.9

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.40

Speed 1/min : 250

C-rod trav.mm : 6.80...7.00

C-rod trav.mm : 2.00

Speed 1/min : 380...440

TORQUE CONTROL

Dimension a mm : 0.35

Torque-control curve - 1st version

1st speed 1/min : 700

C-rod trav.mm : 11.00...11.10

2nd speed 1/min : 1100

C-rod trav.mm : 10.20...10.40

3rd speed 1/min : 500

C-rod trav.mm : 11.00...11.10

4th speed 1/min : 850

C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1100

Del.quantity cm3/ : 94.5...98.5

1000H.: (92.5...100.5)

Speed 1/min : 500

Del.quantity cm3/ : 90.5...94.5

1000H.: (88.5...96.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 9,2 I 5  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 845 067  
  
Injection pump  
Pump designation : PESSA95D410LS2543  
EP type number : 0 410 895 978  
Governor  
Governor design. : RQ25G/1100AB1137-3L  
Governor no. : 0 420 200 085

Customer-spec. information  
Customer : MAN

Engine : D2565 M/MF

1st version kW : 192.0  
Speed 1/min: 2200

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values \_\_\_\_\_

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60  
                  : (1.45...1.65)  
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 5- 4- 2

SD ang. spacing°CS: 0-72-144-216-288  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 5

## BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 11.1...11.2

100H.: (10.9...11.4)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 5.9...6.1

Del.quantity cm3/ : 1.4...1.9

100H.: (1.1...2.1)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 111.5...112.5

1000H.: (109.5...114.5)

Dispersion cm3/ : 3.00

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 10.00

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1185...1215

## LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 7.50  
Speed 1/min : 250  
C-rod trav.mm : 5.90...6.10  
C-rod trav.mm : 2.00  
Speed 1/min : 360...400  
Speed 1/min : 500  
C-rod trav.mm max : 1.00

TORQUE CONTROL

Dimension a mm : 0.35  
Torque-control curve - 1st version  
1st speed 1/min : 1100  
C-rod trav.mm : 11.00...11.10  
2nd speed 1/min : 500  
C-rod trav.mm : 11.70...11.80  
3rd speed 1/min : 750  
C-rod trav.mm : 11.60...11.80  
4th speed 1/min : 930  
C-rod trav.mm : 11.10...11.30

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 107.5...111.5  
1000H.: (105.5...113.5)  
Speed 1/min : 750  
Del.quantity cm3/ : 106.5...110.5  
1000H.: (104.5...112.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 9,2 0 3  
Edition : 12.09.86  
Superceeded : 9.83  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 845 072  
  
Injection pump  
Pump designation : PESSA95D410LS2543  
EP type number : 0 410 895 978  
Governor  
Governor design. : RQV250...1100AB1177-1L  
Governor no. : 0 420 212 163

Customer-spec. information  
Customer : MAN

Engine : D2565 M/MF

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 003

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60  
                  : (1.45...1.65)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 5- 4- 2

SD ang. spacing°CS: 0-72-144-216-288  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 5

## BASIC SETTING

1st speed 1/mi: 1100  
-----  
Contr.-rod trav.mm: 11.00...11.10  
-----  
Del.quantity cm3/ : 11.0...11.2  
-----  
100H.: (10.8...11.4)  
-----  
Dispersion cm3/ : 0.3  
-----  
100H.: (0.6)  
-----  
2nd speed 1/min: 250.0  
Contr.-rod trav. m: 6.4...6.6  
Del.quantity cm3/ : 0.8...1.4  
100H.: (0.5...1.6)  
Dispersion cm3/ : 0.3  
100H.: (0.5)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 150  
Sleeve travel mm: 0.40...0.70  
2nd speed 1/min: 550  
Sleeve travel mm: 3.60...4.00  
3rd speed 1/min: 900  
Sleeve travel mm: 5.60...6.10  
4th speed 1/min: 1200  
Sleeve travel mm: 9.50...10.30

## SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 1140  
Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1100  
Del.quantity cm3/ : 110.5...112.5  
1000H.: (108.5...114.5)  
Dispersion cm3/ : 3.50  
1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 41...49

Testing:

1st c-rod trav.mm : 10.00  
Speed 1/min : 1140...1150  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1180...1210  
4th speed 1/min : 1300  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever  
position degrees: 10...18

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.00  
Speed 1/min : 250  
C-rod trav.mm : 6.40...6.60  
C-rod trav.mm : 2.00  
Speed 1/min : 335...395

TORQUE CONTROL

Dimension a mm : 0.35  
Torque-control curve - 1st version  
1st speed 1/min : 1100  
C-rod trav.mm : 11.00...11.10  
2nd speed 1/min : 500  
C-rod trav.mm : 11.40...11.50  
4th speed 1/min : 900  
C-rod trav.mm : 11.10...11.40

SWITCH-OVER POINT

Speed 1/min : 170 (190)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 0.0...111.5  
1000H.: (0.0...113.5)  
Speed 1/min : 750  
Del.quantity cm3/ : 106.5...110.5  
1000H.: (104.5...112.5)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 9,2 0 1  
Edition : 12.09.86  
Superceeded : 7.84  
Calibrating oil : ISO-4113  
Combination no. : 0 400 845 073  
Injection pump  
Pump designation : PESSA95D410LS2543Z  
EP type number : 0 410 895 977  
Governor  
Governor design. : RQV250...1100AB1177-1L  
Governor no. : 0 420 212 163

Customer-spec. information  
Customer : MAN

Engine : D2565 M/MF

1st version kW : 124.0  
Speed 1/min: 2200

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 003

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60  
: (1.45...1.65)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 5- 4- 2

SD ang. spacing°CS: 0-72-144-216-288  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 5

## BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 9.90...10.00

Del.quantity cm3/ : 9.1...9.3

100H.: (8.9...9.5)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.2...7.4

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 150

Sleeve travel mm: 0.40...0.70

2nd speed 1/min: 550

Sleeve travel mm: 3.60...4.00

3rd speed 1/min: 950

Sleeve travel mm: 6.00...6.50

4th speed 1/min: 1075

Sleeve travel mm: 9.00...9.70

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1140

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 91.5...93.5

1000H.: (89.5...95.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 41...49

Testing:

1st c-rod trav.mm : 8.90  
Speed 1/min : 1140...1150  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1175...1205  
4th speed 1/min : 1300  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever  
position degrees: 11...19

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.70  
Speed 1/min : 250  
C-rod trav.mm : 7.20...7.40  
C-rod trav.mm : 2.00  
Speed 1/min : 345...405

TORQUE CONTROL

Dimension a mm : 0.85  
Torque-control curve - 1st version  
1st speed 1/min : 1100  
C-rod trav.mm : 9.90...10.00  
2nd speed 1/min : 500  
C-rod trav.mm : 10.70...10.80  
3rd speed 1/min : 820  
C-rod trav.mm : 10.40...10.60  
4th speed 1/min : 955  
C-rod trav.mm : 10.00...10.30

SWITCH-OVER POINT

Speed 1/min : 170 (190)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700  
Del.quantity cm3/ : 86.5...90.5  
1000H.: (84.5...92.5)  
Speed 1/min : 500  
Del.quantity cm3/ : 0.0...88.5  
1000H.: (0.0...90.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 N 11  
 Edition : 12.09.86  
 Superseded : 8.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 846 336  
 Injection pump  
 Pump designation : PES6A90D41ORS2293W  
 EP type number : 0 410 896 049  
 Governor  
 Governor design. : RQV300...1425AB740L  
 Governor no. : 0 420 212 037

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM352

1st version kW : 115.0  
 Speed 1/min: 2850

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25  
 : (2.10...2.30)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 10.90...11.00

Del.quantity cm3/ : 7.1...7.2

100H.: (6.9...7.4)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.5...7.7

Del.quantity cm3/ : 0.9...1.5

100H.: (0.7...1.7)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 1460

Sleeve travel mm: 8.40...8.60

2nd speed 1/min: 950

Sleeve travel mm: 5.20...5.50

3rd speed 1/min: 775

Sleeve travel mm: 4.10...4.60

4th speed 1/min: 550

Sleeve travel mm: 2.70...3.00

5th speed 1/min: 300

Sleeve travel mm: 0.70...2.20

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1420

Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 71.5...72.5

1000H.: (69.5...74.5)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever  
position degrees: 55...63

Testing:  
1st c-rod trav.mm : 9.90  
Speed 1/min : 1455...1465  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1560...1590  
4th speed 1/min : 1700  
C-rod trav.mm : 0...1,0

LOWEST RATED SPEED I  
Control-lever  
position degrees: 10...18

Testing:  
Speed 1/min : 100  
C-rod trav.mm min : 9.10  
Speed 1/min : 300  
C-rod trav.mm : 7,5...7,7

CONSTANT REGULATION  
Speed 1/min : 370...520

SWITCH-OVER POINT  
Speed 1/min : 220 (240)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 9,7 P 1  
Edition : 12.09.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 846 449  
  
Injection pump  
Pump designation : PES6A95D420LS2595  
EP type number : 0 410 896 930  
Governor  
Governor design. : RQ200/1050AB1094  
Governor no. : 0 420 201 623

Customer-spec. information  
Customer : RABA

Engine : D2156 HM6U

1st version kW : 141.0  
Speed 1/min: 2100

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
: (1.95...2.05)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 10.60...10.70

Del.quantity cm3/ : 10.2...10.4

100H.: (10.0...10.6)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 200.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.1...1.5

100H.: (0.8...1.7)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 500

Contr.-rod travelmm: 19.20...20.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del.quantity cm3/ : 102.0...104.0

1000H.: (100.0...106.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 500

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 9.60

Speed 1/min : 1095...1110

2nd c-rod trav.mm : 4.00

Speed 1/min : 1125...1155

4th speed 1/min : 1225

C-rod trav.mm : 0...1.00

## LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 200

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.50

Speed 1/min : 200

C-rod trav.mm : 5.90...6.10

C-rod trav.mm : 2.00

Speed 1/min : 270...310

Speed 1/min : 350

C-rod trav.mm max : 1.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1050

C-rod trav.mm : 10.60...10.70

2nd speed 1/min : 500

C-rod trav.mm : 11.10...11.30

3rd speed 1/min : 740

C-rod trav.mm : 11.10...11.30

4th speed 1/min : 800

C-rod trav.mm : 10.90...11.10

SWITCH-OVER POINT

Speed 1/min : 140 (160)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 0.0...91.5

1000H.: (0.0...93.5)

Speed 1/min : 800

Del.quantity cm3/ : 101.5...104.5

1000H.: (99.5...106.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 X 1  
 Edition : 12.09.86  
 Superceeded : 12.84  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 846 474  
 Injection pump  
 Pump designation : PES6A90D410RS2293  
 EP type number : 0 410 896 031  
 Governor  
 Governor design. : RQV300...1400AB1138L  
 Governor no. : 0 420 212 146

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 352A

1st version kW : 123.6  
 Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25  
 : (2.10...2.30)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1375

Contr.-rod trav.mm: 11.30...11.40

Del.quantity cm3/ : 7.5...7.6

100H.: (7.3...7.8)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.6...7.8

Del.quantity cm3/ : 0.9...1.5

100H.: (0.7...1.7)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 1460

Sleeve travel mm: 8.40...8.60

2nd speed 1/min: 950

Sleeve travel mm: 5.20...5.50

3rd speed 1/min: 775

Sleeve travel mm: 4.10...4.60

4th speed 1/min: 550

Sleeve travel mm: 2.70...3.00

5th speed 1/min: 300

Sleeve travel mm: 0.70...1.20

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1420

Contr.-rod travelmm: 16.00...19.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1375

Charge press. hPa : 700

Del.quantity cm3/ : 75.0...76.0

1000H.: (73.0...78.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 57...63

Testing:  
1st c-rod trav.mm : 10.30  
Speed 1/min : 1435...1445  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1550...1580  
4th speed 1/min : 1650  
C-rod trav.mm : 0...1,0

LOWEST RATED SPEED I  
Control-lever  
position degrees: 10...18

Testing:  
Speed 1/min : 100  
C-rod trav.mm min : 9.20  
Speed 1/min : 300  
C-rod trav.mm : 7,6...7,8

CONSTANT REGULATION  
Speed 1/min : 350...475  
compensator (LDA,ADA,ALDA)

1st version  
Setting  
Speed 1/min : 1375  
Pressure hPa : 700  
Contr.-rod trav.mm: 11.30...11.40

Measurement  
Speed 1/min : 1375

1st pressure hPa : -  
C-rod trav.mm : 11.00...11.10  
2nd pressure hPa : 280  
C-rod trav.mm : 11.10...11.20

SWITCH-OVER POINT  
Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

1st version  
Charge press. hPa : -  
Speed 1/min : 500  
Del.quantity cm3/ : 56.0...58.0  
1000H.: (54.0...60.0)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 11,1P21  
Edition : 12.09.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113  
Combination no. : 0 400 846 502  
Injection pump  
Pump designation : PES6A95D410LS2542  
EP type number : 0 410 896 936  
Governor  
Governor design. : RQ250/1100AB1137-2L  
Governor no. : 0 420 200 084

Customer-spec. information  
Customer : MAN

Engine : D2566 M/MF

1st version kW : 177.0  
Speed 1/min: 1500  
2nd version kW : 168.0  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60  
                  : (1.45...1.65)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>°</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 12.4...12.6

100H.: (12.2...12.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 5.9...6.1

Del.quantity cm3/ : 0.8...1.4

100H.: (0.5...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Cont.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 124.5...126.5

1000H.: (122.5...128.5)

Dispersion cm3/ : 3.00

1000H.: (6.00)

2nd version

Speed 1/min: 1100

Del.quantity cm3/ : 118.0...120.0

1000H.: (116.0...122.0)

Dispersion cm3/ : 3.00

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:  
1st c-rod trav.mm : 11.00  
Speed 1/min : 1145...1160  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1195...1225

Setting point:  
Speed 1/min : 600  
Contr.-rod trav.mm: 16.0

Testing:  
1st c-rod trav.mm : 11.0  
Speed 1/min : 1145...1160  
2nd c-rod trav.mm : 4.0  
Speed 1/min : 1195...1225

LOWEST RATED SPEED I  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 6.1

Testing:  
Speed 1/min : 100  
C-rod trav.mm min : 7.50  
Speed 1/min : 250  
C-rod trav.mm : 6.00...6.20  
C-rod trav.mm : 2.00  
Speed 1/min : 360...400

TORQUE CONTROL  
Torque-control curve - 1st version  
1st speed 1/min : 1100  
C-rod trav.mm : 12.00...12.10  
2nd speed 1/min : 500  
C-rod trav.mm : 12.00...12.20

Torque-control curve - 2nd version  
1st speed 1/min : -  
C-rod trav.mm : -  
2nd speed 1/min : -  
C-rod trav.mm : -

FUEL-DELIVERY CHARACTERISTICS  
Speed 1/min : 500  
Del.quantity cm3/ : 107.5...113.5  
1000H.: (105.5...115.5)  
Speed 1/min : 750  
Del.quantity cm3/ : 110.5...113.5  
1000H.: (108.0...116.0)  
Speed 1/min : 500  
Del.quantity cm3/ : 102.0...108.0  
1000H.: (100.0...110.0)  
Speed 1/min : 750  
Del.quantity cm3/ : 106.0...109.0  
1000H.: (104.0...111.0)

Remarks:

D22

APPLICATION : MAN-NR.2-7409-VERS.1  
: \*-VERSION 2

\*Tropics version

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : RAB 9,7 B  
 Edition : 14.11.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 846 514  
 Injection pump  
 Pump designation : PES6A95D420LS2595  
 EP type number : 0 410 896 930  
 Governor  
 Governor design. : RQ200/1100AB1094-1R  
 Governor no. : 0 420 201 637

Customer-spec. information  
 Customer : RABA

Engine : D2356HM6U

1st version kW : 162.0  
 Speed 1/min: 2200

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.05)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 11.30...11.40

Del.quantity cm3/ : 11.4...11.6

100H.: (11.2...11.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 200.0

Contr.-rod trav. m: 6.6...6.8

Del.quantity cm3/ : 0.8...1.4

100H.: (0.5...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 550

Contr.-rod travelmm: 19.20...20.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm3/ : 114.0...116.0

1000H.: (112.0...118.0)

Dispersion cm3/ : 3.00

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 550

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 10.30

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1175...1205

## LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 200

Contr.-rod trav.mm: 6.5

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.00  
Speed 1/min : 200  
C-rod trav.mm : 6.40...6.60  
C-rod trav.mm : 2.00  
Speed 1/min : 290...330  
Speed 1/min : 400  
C-rod trav.mm max : 1.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1100  
C-rod trav.mm : 11.30...11.40  
2nd speed 1/min : 500  
C-rod trav.mm : 11.90...12.00  
3rd speed 1/min : 750  
C-rod trav.mm : 11.80...12.00  
4th speed 1/min : 800  
C-rod trav.mm : 11.60...11.90

SWITCH-OVER POINT

Speed 1/min : 140 (160)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 0.0...110.0  
1000H.: (0.0...112.5)  
Speed 1/min : 800  
Del.quantity cm3/ : 112.0...118.0  
1000H.: (109.5...120.5)

Remarks:

APPLICATION

Omnibus

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : LIE 8,4 B  
 Edition : 12.09.86  
 Superceeded : 4.86  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 846 536  
 Injection pump  
 Pump designation : PES6A100D41ORS2687  
 EP type number : 0 410 806 001  
 Governor  
 Governor design. : RQV400...1000AB1203L  
 Governor no. : 0 420 212 177

Customer-spec. information  
 Customer : LIEBHERR

Engine : D906T

1st version kW : 132.0  
 Speed 1/min: 2000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 40...45

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80  
 : (2.65...2.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300  
 Tolerance + -<sup>0</sup> : 0.50 (0.75)

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00  
 Difference<sup>0</sup> CS : 4.00...5.00

## BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 10.5...10.7

100H.: (10.3...10.9)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 400.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.0...1.6

100H.: (0.7...1.8)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 375

Sleeve travel mm: 1.00...1.10

2nd speed 1/min: 600

Sleeve travel mm: 3.70...4.00

3rd speed 1/min: 1000

Sleeve travel mm: 7.50...7.60

4th speed 1/min: 1150

Sleeve travel mm: 9.50...10.20

## SLEEVE POSITION

Control-lever position

Degree: 1

Speed 1/min: 1070

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 700

Del.quantity cm3/ : 105.0...107.0

1000H.: (103.0...109.0)

Dispersion cm3/ : 3.50  
1000H.: (6.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

#### Testing:

1st c-rod trav.mm : 10.30

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1105...1135

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.40

Speed 1/min : 400

C-rod trav.mm : 6.90...7.10

#### CONSTANT REGULATION

Speed 1/min : 420...530

#### TORQUE CONTROL

Dimension a mm : 1.40

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 11.40...11.50

2nd speed 1/min : 500

C-rod trav.mm : 12.80...12.90

4th speed 1/min : 900

C-rod trav.mm : 11.80...12.00

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 12.80...12.90

#### Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.30...11.40

2nd pressure hPa : 400

C-rod trav.mm : 12.40...12.50

3rd pressure hPa : 370

C-rod trav.mm : 11.60...11.80

#### SWITCH-OVER POINT

Speed 1/min : 320 (340)

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : 700

Speed 1/min : 700

Del.quantity cm3/ : 118.5...121.5

1000H.: (116.0...124.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 87.5...90.5

1000H.: (85.5...92.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 P 1  
Edition : 28.10.86  
Superceeded : 4.86  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 846 537  
  
Injection pump  
Pump designation : PES6A95D32ORS2693Z  
EP type number : 0 410 896 913  
Governor  
Governor design. : RQ300/1300AB1204R  
Governor no. : 0 420 201 640

Customer-spec. information  
Customer : DAF

Engine : DNS 620

1st version kW : 150.0  
Speed 1/min: 2600

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
: (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

#### START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
& c-rod tray max. : 21.0  
Difference<sup>o</sup> CS : 2.50...3.50

#### BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 12.20...12.30

Del.quantity cm3/ : 8.7...8.9

100H.: (8.5...9.1)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.3...6.5

Del.quantity cm3/ : 0.7...1.1

100H.: (0.4...1.3)

Dispersion cm3/ : 0.3

100H.: (0.5)

#### SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 820

Contr.-rod travelmm: 19.20...20.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 700

Del.quantity cm3/ : 87.0...89.0

1000H.: (85.0...91.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

#### HIGHEST RATED SPEED

Setting point:

Speed 1/min : 820

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 10.70

Speed 1/min : 1345...1360

2nd c-rod trav.mm : 4.00

Speed 1/min : 1425...1455

4th speed 1/min : 1550

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.4

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.30

Speed 1/min : 300

C-rod trav.mm : 6.30...6.50

C-rod trav.mm : 2.00

Speed 1/min : 525...565

#### TORQUE CONTROL

Dimension a mm : 0.57

Torque-control curve - 1st version

1st speed 1/min : 1290

C-rod trav.mm : 11.70...11.90

2nd speed 1/min : 850

C-rod trav.mm : 13.20...13.30

3rd speed 1/min : 965

C-rod trav.mm : 12.70...12.80

4th speed 1/min : 1060

C-rod trav.mm : 12.20...12.40

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 700

Contr.-rod trav.mm: 12.20...12.30

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 11.20...11.40

2nd pressure hPa : 290

C-rod trav.mm : 12.00...12.10

3rd pressure hPa : 250

C-rod trav.mm : 11.50...11.70

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 1290

Del.quantity cm3/ : 86.0...88.0

1000H.: (83.5...90.5)







Charge press. hPa : -  
Speed 1/min : 600  
Del. quantity cm3/ : 65.0...67.0  
1000H.: (63.0...69.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 P 2  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 846 538  
  
Injection pump  
Pump designation : PES6A95D32ORS2693  
EP type number : 0 410 896 914  
Governor  
Governor design. : RQ300/1300AB1204R  
Governor no. : 0 420 201 640

Customer-spec. information  
Customer : DAF

Engine : DNT 620

1st version kW : 130.0  
Speed 1/min: 2600

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
: (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

#### START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
& c-rod trav max. : 21.0  
Difference<sup>o</sup> CS : 2.50...3.50

#### BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 11.50...11.60

Del.quantity cm3/ : 7.6...7.8

100H.: (7.4...8.0)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.3...6.5

Del.quantity cm3/ : 0.7...1.1

100H.: (0.4...1.3)

Dispersion cm3/ : 0.3

100H.: (0.5)

#### SLEEVE POSITION

Control-lever position

Degree: 45...47

Speed 1/min: 850

Contr.-rod travelmm: 19.20...20.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 700

Del.quantity cm3/ : 76.0...78.0

1000H.: (74.0...80.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

#### HIGHEST RATED SPEED

Setting point:

Speed 1/min : 850

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 9.70

Speed 1/min : 1350...1365

2nd c-rod trav.mm : 4.00

Speed 1/min : 1420...1450

4th speed 1/min : 1550

C-rod trav.mm : 0...1.0

#### LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.4

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.30

Speed 1/min : 300

C-rod trav.mm : 6.30...6.50

C-rod trav.mm : 2.00

Speed 1/min : 525...565

#### TORQUE CONTROL

Dimension a mm : 0.57

Torque-control curve - 1st version

1st speed 1/min : 1290

C-rod trav.mm : 10.70...10.80

2nd speed 1/min : 850

C-rod trav.mm : 12.20...12.30

3rd speed 1/min : 935

C-rod trav.mm : 11.80...12.00

4th speed 1/min : 1080

C-rod trav.mm : 11.00...11.30

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 700

Contr.-rod trav.mm: 11.50...11.60

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 11.20...11.40

2nd pressure hPa : 250

C-rod trav.mm : 11.40...11.50

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 1290

Del.quantity cm3/ : 72.0...74.0

1000H.: (69.5...76.5)

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 65.0...67.0  
1000H.: (63.0...69.0)

Remarks:

## BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 P  
Edition : 12.09.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113

Combination no. : 0 400 846 539

Injection pump  
Pump designation : PES6A95D32ORS2693  
EP type number : 0 410 896 914  
Governor  
Governor design. : RQ300/1300AB120SR  
Governor no. : 0 420 201 642

Customer-spec. information  
Customer : DAF

Engine : DNTD 620

1st version kW : 110.0  
Speed 1/min: 2600

### TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

### START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
: (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

#### START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
& c-rod tray max. : 21.0  
Difference<sup>o</sup> CS : 2.50...3.50

#### BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 10.80...10.90

Del.quantity cm<sup>3</sup>/ : 6.4...6.6

100H.: (6.2...6.8)

Dispersion cm<sup>3</sup>/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.1...6.3

Del.quantity cm<sup>3</sup>/ : 0.7...1.0

100H.: (0.4...1.2)

Dispersion cm<sup>3</sup>/ : 0.3

100H.: (0.5)

#### SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 850

Contr.-rod travelmm: 19.20...20.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Del.quantity cm<sup>3</sup>/ : 64.0...66.0

1000H.: (62.0...68.0)

Dispersion cm<sup>3</sup>/ : 3.50

1000H.: (6.00)

#### HIGHEST RATED SPEED

Setting point:

Speed 1/min : 850

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 9.30

Speed 1/min : 1335...1350

2nd c-rod trav.mm : 4.00

Speed 1/min : 1400...1430

4th speed 1/min : 1550

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.4

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.30

Speed 1/min : 300

C-rod trav.mm : 6.30...6.50

C-rod trav.mm : 2.00

Speed 1/min : 525...565

#### TORQUE CONTROL

Dimension a mm : 0.35

Torque-control curve - 1st version

1st speed 1/min : 850

C-rod trav.mm : 11.20...11.40

2nd speed 1/min : 1290

C-rod trav.mm : 10.30...10.40

3rd speed 1/min : 970

C-rod trav.mm : 10.90...11.10

4th speed 1/min : 1050

C-rod trav.mm : 10.40...10.60

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1290

Del.quantity cm<sup>3</sup>/ : 69.0...71.0

1000H.: (66.5...73.5)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 9,6 S  
 Edition : 12.09.86  
 Superceeded : 1.86  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 846 544  
 Injection pump  
 Pump designation : PES6A95D410RS2416  
 EP type number : 0 410 896 961  
 Governor  
 Governor design. : RQV300...1250AB1211L  
 Governor no. : 0 420 212 184

Customer-spec. information  
 Customer : KHD

Engine : F6L413FR

1st version kW : 123.0  
 Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values \_\_\_\_\_

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00  
 : (1.85...2.05)  
 Contr.-rod trav.mm: 9.00...12.00

E08

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1250  
 -----  
 Contr.-rod trav.mm: 10.00...10.10  
 -----  
 Del.quantity cm3/ : 9.9...10.1  
 -----  
 100H.: (9.7...10.3)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.6)  
 -----  
 2nd speed 1/min: 300.0  
 Contr.-rod trav. m: 6.4...6.6  
 Del.quantity cm3/ : 1.9...2.5  
 100H.: (1.6...2.7)  
 Dispersion cm3/ : 0.3  
 100H.: (0.5)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 250  
 Sleeve travel mm: 1.00...1.20  
 2nd speed 1/min: 500  
 Sleeve travel mm: 3.20...3.50  
 3rd speed 1/min: 1000  
 Sleeve travel mm: 6.20...6.40  
 4th speed 1/min: 1250  
 Sleeve travel mm: 8.20...8.30

## SLEEVE POSITION

Control-lever position  
 Degree: -1  
 Speed 1/min: 1280  
 Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1250  
 Del.quantity cm3/ : 99.0...101.0  
 1000H.: (97.0...103.0)  
 Dispersion cm3/ : 3.50  
 1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 46...54

Testing:

1st c-rod trav.mm : 9.00  
Speed 1/min : 1290...1300  
2nd c-rod trav.mm : 4.50  
Speed 1/min : 1350...1380  
4th speed 1/min : 1500  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever  
position degrees: 14...22

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.00  
Speed 1/min : 300  
C-rod trav.mm : 6.40...6.60

CONSTANT REGULATION

Speed 1/min : 370...485

TORQUE CONTROL

Dimension a mm : 0.30  
Torque-control curve - 1st version  
1st speed 1/min : 1250  
C-rod trav.mm : 10.00...10.10  
2nd speed 1/min : 600  
C-rod trav.mm : 10.20...10.30  
3rd speed 1/min : 715  
C-rod trav.mm : 10.10...10.30  
4th speed 1/min : 765  
C-rod trav.mm : 10.00...10.30

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 91.5...94.5  
1000H.: (89.0...97.0)

Remarks:

APPLICATION

Special-purpose vehicle

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 6,1 M  
 Edition : 12.09.86  
 Superceeded : 1.86  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 846 548  
 Injection pump  
 Pump designation : PES6A95D41ORS2715  
 EP type number : 0 410 896 911  
 Governor  
 Governor design. : RQV300...1250AB1158-  
 1L  
 Governor no. : 0 420 212 188

Customer-spec. information  
 Customer : KHD

Engine : BF6L913

1st version kW : 140.0  
 Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00  
 : (1.85...2.05)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 14.00...14.10

Del.quantity cm3/ : 9.4...9.6

100H.: (9.2...9.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 4.9...5.1

Del.quantity cm3/ : 1.0...1.6

100H.: (0.7...1.8)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.80...0.90

2nd speed 1/min: 600

Sleeve travel mm: 3.60...3.90

3rd speed 1/min: 900

Sleeve travel mm: 5.20...5.40

4th speed 1/min: 1200

Sleeve travel mm: 7.80...7.90

5th speed 1/min: 1400

Sleeve travel mm: 10.00...10.40

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1265

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Charge press. hPa : 700

Del.quantity cm3/ : 94.5...96.5

1000H.: (92.5...98.5)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 63...71

### Testing:

1st c-rod trav.mm : 13.00

Speed 1/min : 1290...1300

2nd c-rod trav.mm : 4.00

Speed 1/min : 1390...1420

4th speed 1/min : 1550

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Control-lever

position degrees: 5...13

### Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.50

Speed 1/min : 300

C-rod trav.mm : 4.90...5.10

C-rod trav.mm : 2.00

Speed 1/min : 360...420

## TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1250

C-rod trav.mm : 14.00...14.10

2nd speed 1/min : 500

C-rod trav.mm : 14.00...14.20

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 14.00...14.10

### Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.20...10.30

2nd pressure hPa : 390

C-rod trav.mm : 13.10...13.20

3rd pressure hPa : 200

C-rod trav.mm : 11.40...11.60

## SWITCH-OVER POINT

Speed 1/min : 220 (240)

## FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 800

Del.quantity cm3/ : 92.5...95.5

1000H.: (90.0...98.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 53.0...55.0

1000H.: (51.0...57.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 6,1 N  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISG-4113  
 Combination no. : 0 400 846 549  
 Injection pump  
 Pump designation : PES6A95D41ORS2471  
 EP type number : 0 410 896 952  
 Governor  
 Governor design. : RQV300...1250AB1089-  
 2L  
 Governor no. : 0 420 212 190  
 Customer-spec. information  
 Customer : KHD

Engine : BF6L913C

1st version kW : 141.0  
 Speed 1/min: 2500

## TEST BENCH REQUIREMENTS

Calibrating-gil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000  
 Inlet press., bar : 1.00  
 Calibrating nozzle-holder  
 assembly : 0 681 343 009  
 Opening  
 pressure, bar : 172...175  
 Test inj. tubing : 1 680 750 014  
 Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600  
 (A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27  
 Prestroke mm : 1.90...2.00  
 : (1.85...2.05)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + - <sup>o</sup> : 0.50 (0.75)

#### BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 11.60...11.70

Del.quantity cm3/ : 10.1...10.3

100H.: (9.9...10.5)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.5...7.7

Del.quantity cm3/ : 1.0...1.6

100H.: (0.7...1.8)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with  
externally-mounted governor

#### SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.30...1.40

2nd speed 1/min: 650

Sleeve travel mm: 3.70...3.90

3rd speed 1/min: 1200

Sleeve travel mm: 6.90...7.10

4th speed 1/min: 1290

Sleeve travel mm: 8.40...8.50

#### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1290

Contr.-rod travelmm: 15.20...17.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Del.quantity cm3/ : 101.0...103.0

1000H.: (99.0...105.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

#### HIGHEST RATED SPEED

1st version

Control-lever  
position degrees: 69...77

#### Testing:

1st c-rod trav.mm : 10.60

Speed 1/min : 1290...1300

2nd c-rod trav.mm : 4.00

Speed 1/min : 1345...1375

4th speed 1/min : 1500

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 14...22

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.00

Speed 1/min : 300

C-rod trav.mm : 7,50...7,70

#### CONSTANT REGULATION

Speed 1/min : 350...485

#### TORQUE CONTROL

Dimension a mm : -

Torque-control curve - 1st version

1st speed 1/min : 1250

C-rod trav.mm : 11.60...11.70

2nd speed 1/min : 500

C-rod trav.mm : 11.60...11.80

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 850

Del.quantity cm3/ : 94.5...97.5

1000H.: (92.0...100.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA 5,9 B  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 846 5...  
Injection pump  
Pump designation : PES6A90D410RS2723  
EP type number : 0 410 896 085  
Governor  
Governor design. : RQV300...1500AB1152-1L  
Governor no. : 0 420 212 195

Customer-spec. information  
Customer : IVECO-FIAT

Engine : 8060.05.661

1st version kW : 81.0  
Speed 1/min: 3000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30  
(2.15...2.35)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1500

Contr.-rod trav.mm: 9.00...9.10

Del.quantity cm3/ : 4.7...4.8

100H.: (4.5...5.0)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.2...8.4

Del.quantity cm3/ : 1.0...1.6

100H.: (0.8...1.8)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 345

Sleeve travel mm: 2.20...2.40

2nd speed 1/min: 410

Sleeve travel mm: 2.80...3.20

3rd speed 1/min: 630

Sleeve travel mm: 4.30...4.70

4th speed 1/min: 1545

Sleeve travel mm: 8.60...8.70

5th speed 1/min: 1650

Sleeve travel mm: 9.30...9.50

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1525

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1500

Del.quantity cm3/ : 47.5...48.5

1000H.: (45.5...50.5)

Dispersion cm3/ : 3.00

1000H.: (4.50)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

#### Testing:

1st c-rod trav.mm : 8.00

Speed 1/min : 1540...1550

2nd c-rod trav.mm : 4.00

Speed 1/min : 1635...1665

4th speed 1/min : 1800

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 15...23

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.00

Speed 1/min : 300

C-rod trav.mm : 8.20...8.40

#### CONSTANT REGULATION

Speed 1/min : 330...430

#### TORQUE CONTROL

Dimension a mm : 1.30

Torque-control curve - 1st version

1st speed 1/min : 1500

C-rod trav.mm : 9.00...9.10

2nd speed 1/min : 500

C-rod trav.mm : 10.30...10.40

3rd speed 1/min : 785

C-rod trav.mm : 9.90...10.10

4th speed 1/min : 1210

C-rod trav.mm : 9.30...9.50

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del. quantity cm<sup>3</sup>/ : 43.0...45.0

1000H.: (39.5...46.5)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA 5,9 B 1  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 846 552  
 Injection pump  
 Pump designation : PES6A90D41ORS2723  
 EP type number : 0 410 896 085  
 Governor  
 Governor design. : RQV300...1500AB1152-2L  
 Governor no. : 0 420 212 196  
 Customer-spec. information  
 Customer : IVECO-FIAT  
 Engine : 8060.05.662

1st version kW : 88.0  
 Speed 1/min: 3000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30  
 : (2.15...2.35)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1500

Contr.-rod trav.mm: 10.00...10.10

Del.quantity cm3/ : 5.7...5.8

100H.: (5.5...6.0)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 9.2...9.4

Del.quantity cm3/ : 1.0...1.6

100H.: (0.8...1.8)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 345

Sleeve travel mm: 2.20...2.40

2nd speed 1/min: 410

Sleeve travel mm: 2.80...3.20

3rd speed 1/min: 630

Sleeve travel mm: 4.30...4.70

4th speed 1/min: 1545

Sleeve travel mm: 8.60...8.70

5th speed 1/min: 1650

Sleeve travel mm: 9.30...9.50

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1525

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1500

Del.quantity cm3/ : 57.5...58.5

1000H.: (55.5...60.5)

Dispersion cm3/ : 3.00

1000H.: (4.50)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

#### Testing:

1st c-rod trav.mm : 9.00

Speed 1/min : 1540...1550

2nd c-rod trav.mm : 4.00

Speed 1/min : 1655...1685

#### LOWEST RATED SPEED I

Control-lever

position degrees: 18...26

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.00

Speed 1/min : 300

C-rod trav.mm : 9.20...9.40

#### CONSTANT REGULATION

Speed 1/min : 330...430

#### TORQUE CONTROL

Dimension a mm : 0.90

Torque-control curve - 1st version

1st speed 1/min : 1500

C-rod trav.mm : 10.00...10.10

2nd speed 1/min : 500

C-rod trav.mm : 10.90...11.00

3rd speed 1/min : 725

C-rod trav.mm : 10.60...10.80

4th speed 1/min : 1175

C-rod trav.mm : 10.20...10.40

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm<sup>3</sup>/ : 48.0...50.0

1000H.: (45.5...52.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 A 2  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 846 556  
Injection pump  
Pump designation : PES6A90D410RS2667  
EP type number : 0 410 896 080  
Governor  
Governor design. : RQV300...1400AB1065-6L  
Governor no. : 0 420 212 198

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 98.0  
Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 6.0...6.1

100H.: (5.8...6.3)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 9.0...9.6

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.6)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.80...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.30...2.80

3rd speed 1/min: 750

Sleeve travel mm: 4.10...4.30

4th speed 1/min: 1500

Sleeve travel mm: 8.50...8.60

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1500

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 60.0...61.0

1000H.: (58.0...63.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever  
position degrees: 61...69

Testing:  
1st c-rod trav.mm : 10.10  
Speed 1/min : 1440...1450  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1545...1575  
4th speed 1/min : 1630  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 21...29

Testing:  
Speed 1/min : 100  
C-rod trav.mm min : 10.80  
Speed 1/min : 300  
C-rod trav.mm : 9.00...9.60

#### CONSTANT REGULATION

Speed 1/min : 540...700

#### TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1400  
C-rod trav.mm : 11.00...11.10  
2nd speed 1/min : 400  
C-rod trav.mm : 12.40...12.50  
3rd speed 1/min : 650  
C-rod trav.mm : 11.90...12.10  
4th speed 1/min : 950  
C-rod trav.mm : 11.40...11.70

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 400  
Del.quantity cm3/ : 47.0...49.0  
1000H.: (44.5...51.5)  
Speed 1/min : 750  
Del.quantity cm3/ : 48.0...50.0  
1000H.: (45.5...52.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 846 559  
Injection pump  
Pump designation : PES6A90D41ORS2710  
EP type number : 0 410 896 082  
Governor  
Governor design. : RQV300...1400AB1065-9L  
Governor no. : 0 420 212 202

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 92.0  
Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 10.30...10.40

Del.quantity cm3/ : 5.9...6.0

100H.: (5.7...6.2)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.5...8.7

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.6)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.80...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.30...2.80

3rd speed 1/min: 750

Sleeve travel mm: 4.10...4.30

4th speed 1/min: 1500

Sleeve travel mm: 8.50...8.60

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1500

Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 59.0...60.0

1000H.: (57.0...62.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever  
position degrees: 58...66

Testing:

1st c-rod trav.mm : 9.30  
Speed 1/min : 1440...1450  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1530...1560  
4th speed 1/min : 1650  
C-rod trav.mm : 0.00...1.40

LOWEST RATED SPEED I

Control-lever  
position degrees: 23...31

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 10.10  
Speed 1/min : 300  
C-rod trav.mm : 8.50...8.70

CONSTANT REGULATION

Speed 1/min : 530...680

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1400  
C-rod trav.mm : 10.30...10.40  
2nd speed 1/min : 500  
C-rod trav.mm : 11.50...11.60  
3rd speed 1/min : 750  
C-rod trav.mm : 11.10...11.30  
4th speed 1/min : 1100  
C-rod trav.mm : 10.50...10.80

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 45.0...47.0  
1000H.: (42.5...49.5)  
Speed 1/min : 850  
Del.quantity cm3/ : 47.5...50.5  
1000H.: (45.0...53.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 9,0 A 1  
Edition : 19.12.86  
Superceeded : 4.84  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 848 023  
  
Injection pump  
Pump designation : PES8A9SD32ORS2586  
Governor  
Governor design. : RQV325...1400AB1087R

Customer-spec. information  
Customer : IH

Engine : D9L

1st version kW : 121.4  
Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 40...45

Overflow valve : 1 417 413 019

Inlet press., bar : 2.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter  
x Wall thickness  
x Length mm : 6,00X2,00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Prestroke mm : 2.55...2.65  
: (2.50...2.70)  
Contr.-rod trav.mm: 10.50  
Cam sequence : 1-8-7-3-6-4-2

SD ang. spacing°CS: 0-45-90-135-180-225-  
270-315  
Tolerance + - ° : 0.5 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 10.70

Del.quantity cm3/ : 5.9...6.1

100H.: (-)

Dispersion cm3/ : 0.3

100H.: (-)

2nd speed 1/min: 325

Contr.-rod trav. m: 7.30

Del.quantity cm3/ : 0.9...1.5

100H.: (-)

Dispersion cm3/ : 0.3

100H.: (-)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 1430

Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 59.5...61.5

1000H.: (57.5...63.5)

Dispersion cm3/ : 3.0

1000H.: (-)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 61...69

Testing:

1st c-rod trav.mm : 9.70

Speed 1/min : 1440...1450

2nd c-rod trav.mm : 4.00

Speed 1/min : 1520...1550

4th speed 1/min : 1650

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Control-lever

position degrees: 6...14

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 9.60  
Speed 1/min : 325  
C-rod trav.mm : 7.20...7.40  
C-rod trav.mm : 2.0  
Speed 1/min : 680...740

SWITCH-OVER POINT

Speed 1/min : 205...265

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800  
Del.quantity cm3/ : <54.0  
1000H.: (<58.0)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 3,0 C  
Edition : 20.10.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 863 011  
Injection pump  
Pump designation : PES3A90D410/3RS2720  
EP type number : 0 410 893 005  
Governor  
Governor design. : RSV325...1150A0C2219  
L  
Governor no. : 0 420 232 466

Customer-spec. information  
Customer : KHD

Engine : F3L913G  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
: (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 2

SD ang. spacing°CS: 0-120-240  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 8.90...9.00

Del.quantity cm3/ : 6.0...6.1

100H.: (5.8...6.3)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 375.0

Contr.-rod trav. m: 6.8...7.0

Del.quantity cm3/ : 0.9...1.5

100H.: (0.7...1.7)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 5.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del.quantity cm3/ : 60.0...61.0

1000H.: (58.0...63.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 55...63

Testing:

1st c-rod trav.mm : 7.90

Speed 1/min : 1090...1100

2nd c-rod trav.mm : 4.00

Speed 1/min : 1115...1145

3rd c-rod trav.mm : 4.00

Speed 1/min : 1140...1170

4th speed 1/min : 1305

C-rod trav.mm : 0.30...1.40

# LOWEST RATED SPEED I

Control-lever

position degrees: 19...27

Setting point w/out aux. spring

Speed 1/min : 375

Contr.-rod trav.mm: 6.4

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 375

C-rod trav.mm : 6.80...7.00

C-rod trav.mm : 2.00

Speed 1/min : 510...570

## TORQUE CONTROL

Dimension a mm : 0.70

Torque-control curve - 1st version

1st speed 1/min : 1050

C-rod trav.mm : 8.90...9.00

2nd speed 1/min : 500

C-rod trav.mm : 9.60...9.70

4th speed 1/min : 640

C-rod trav.mm : 9.30...9.50

## FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 50.5...52.5

1000H.: (48.0...55.0)

Remarks:

APPLICATION

Loading machine

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 1 G 6  
Edition : 12.09.86  
Superceeded : 9.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 864 051  
  
Injection pump  
Pump designation : PES4A85D410/3RS2610  
EP type number : 0 410 884 951  
Governor  
Governor design. : RSV325...1150A8C2102  
L  
Governor no. : 0 420 232 290  
  
Customer-spec. information  
Customer : KHD

Engine : F4L913  
  
1st version kW : 55.2  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000  
  
Inlet press., bar : 1.00  
  
Calibrating nozzle-holder  
assembly : 0 681 343 009  
  
Opening  
pressure, bar : 172...175  
  
Test inj. tubing : 1 680 750 014  
  
Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600  
  
(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27  
  
Prestroke mm : 2.50...2.60  
: (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1175  
-----  
Contr.-rod trav.mm: 11.20...11.30  
-----  
Del.quantity cm3/ : 6.3...6.5  
-----  
100H.: (6.1...6.7)  
-----  
Dispersion cm3/ : 0.3  
-----  
100H.: (0.4)  
-----  
2nd speed 1/min: 325.0  
Contr.-rod trav. m: 8.7...8.9  
Del.quantity cm3/ : 0.7...1.3  
100H.: (0.5...1.5)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Cont.-rod travelmm: 0.30...0.70  
  
Governor-spring reload  
Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1175  
Del.quantity cm3/ : 63.0...65.0  
1000H.: (61.0...67.0)  
Dispersion cm3/ : 3.00  
1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 52...60

Testing:  
1st c-rod trav.mm : 10.20  
Speed 1/min : 1215...1225  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1250...1280  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1280...1310  
4th speed 1/min : 1430

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 8.3

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 325

C-rod trav.mm : 8.70...8.90

C-rod trav.mm : 2.00

Speed 1/min : 460...520

#### TORQUE CONTROL

Dimension a mm : 1.00

Torque-control curve - 1st version

1st speed 1/min : 1175

C-rod trav.mm : 11.20...11.30

2nd speed 1/min : 500

C-rod trav.mm : 12.20...12.30

3rd speed 1/min : 800

C-rod trav.mm : 11.90...12.00

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800

Del.quantity cm3/ : 60.0...62.0

1000H.: (57.5...64.5)

Remarks:

APPLICATION

Tractor (tractor engines)

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 1 G 23  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 864 055  
 Injection pump  
 Pump designation : PES4A85D410/3RS2610  
 EP type number : 0 410 884 951  
 Governor  
 Governor design. : RSV325...1150A8C2163  
 L  
 Governor no. : 0 420 232 296

Customer-spec. information  
 Customer : KHD

Engine : F4L913

1st version kW : 55.0  
 Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
 : (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1150  
 -----  
 Contr.-rod trav.mm: 11.30...11.40  
 -----  
 Del.quantity cm3/ : 6.8...6.9  
 -----  
 100H.: (6.6...7.1)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.4)  
 -----  
 2nd speed 1/min: 325.0  
 Contr.-rod trav. m: 9.1...9.3  
 Del.quantity cm3/ : 1.5...1.9  
 100H.: (1.3...2.1)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...1.00

Governor-spring reload  
 Notch setting x : 4.50

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1150  
 Del.quantity cm3/ : 68.0...69.0  
 1000H.: (66.0...71.0)  
 Dispersion cm3/ : 3.00  
 1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 51...59

Testing:  
 1st c-rod trav.mm : 10.30  
 Speed 1/min : 1190...1200  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1225...1255  
 3rd c-rod trav.mm : 4.00  
 Speed 1/min : 1245...1275  
 4th speed 1/min : 1400

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 15...23

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 8.7

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 325

C-rod trav.mm : 9.10...9.30

C-rod trav.mm : 2.00

Speed 1/min : 470...530

#### TORQUE CONTROL

Dimension a mm : 0.80

Torque-control curve - 1st version

1st speed 1/min : 1150

C-rod trav.mm : 11.30...11.40

2nd speed 1/min : 500

C-rod trav.mm : 12.10...12.20

3rd speed 1/min : 800

C-rod trav.mm : 11.80...12.00

4th speed 1/min : 900

C-rod trav.mm : 11.60...11.80

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm<sup>3</sup>/ : 58.0...61.0

1000H.: (55.5...63.5)

1000H.: (5.50)

Remarks:

: DX 80

APPLICATION

Tractor (tractor engines)

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 4,1 C 7  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 864 058  
  
Injection pump  
Pump designation : PES4A80D410/3RS2523  
EP type number : 0 410 884 043  
Governor  
Governor design. : RSV325...1250A8C540-1L  
Governor no. : 0 420 232 355

Customer-spec. information  
Customer : KHD

Engine : F4L913

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
Inst. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00  
                  : (1.85...2.05)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1250  
-----  
Contr.-rod trav.mm: 11.60...11.70  
-----  
Del.quantity cm3/ : 6.8...6.9  
100H.: (6.7...7.1)  
-----  
Dispersion cm3/ : 0.2  
100H.: (0.4)  
-----  
2nd speed 1/min: 325.0  
Contr.-rod trav. m: 8.2...8.4  
Del.quantity cm3/ : 1.0...1.6  
100H.: (0.8...1.7)  
Dispersion cm3/ : 0.2  
100H.: (0.3)

## SLEEVE POSITION

Governor-spring reload  
Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1250  
Del.quantity cm3/ : 68.5...69.5  
1000H.: (67.0...71.0)  
Dispersion cm3/ : 2.50  
1000H.: (4.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 52...60

## Testing:

1st c-rod trav.mm : 10.60  
Speed 1/min : 1290...1300  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1320...1350  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1320...1350  
4th speed 1/min : 1555  
C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Control-lever  
position degrees: 13...21  
Setting point w/out aux. spring  
Speed 1/min : 325

Contr.-rod trav.mm: 6,5

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 325  
C-rod trav.mm : 6.90...7.10  
C-rod trav.mm : 2.00  
Speed 1/min : 630...690

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1250  
C-rod trav.mm : 11.60...11.70  
2nd speed 1/min : 500  
C-rod trav.mm : 12.10...12.20  
4th speed 1/min : 965  
C-rod trav.mm : 11.80...12.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800  
Del.quantity cm3/ : 64.5...66.5  
1000H.: (62.5...68.5)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 4,1 D 3  
 Edition : 12.09.86  
 Superceeded : 1.86  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 864 060  
 Injection pump  
 Pump designation : PES4A85D410/3RS2638  
 EP type number : 0 410 884 950  
 Governor  
 Governor design. : RSV325...1400A8C707L  
 Governor no. : 0 420 232 336

Customer-spec. information  
 Customer : KHD

Engine : BF4L913

1st version kW : 78.0  
 Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness : 6.00X2.00X600  
 x Length mm

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
 : (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
 Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1250  
 -----  
 Contr.-rod trav.mm: 12.70...12.80  
 -----  
 Del.quantity cm3/ : 8.2...8.3  
 -----  
 100H.: (8.0...8.5)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.4)  
 -----  
 2nd speed 1/min: 325.0  
 Contr.-rod trav. m: 8.4...8.6  
 Del.quantity cm3/ : 0.9...1.5  
 100H.: (0.7...1.7)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 5.25

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1250  
 Charge press. hPa : 700  
 Del.quantity cm3/ : 82.5...83.5  
 1000H.: (80.5...85.5)  
 Dispersion cm3/ : 3.00  
 1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 58...66

Testing:  
 1st c-rod trav.mm : 11.70  
 Speed 1/min : 1290...1300  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1340...1370  
 3rd c-rod trav.mm : 4.00  
 Speed 1/min : 1390...1420  
 4th speed 1/min : 1560

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 18...26

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 8.0

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 325

C-rod trav.mm : 8.40...8.60

C-rod trav.mm : 2.00

Speed 1/min : 660...720

#### TORQUE CONTROL

Dimension a mm : 0.80

Torque-control curve - 1st version

1st speed 1/min : 1250

C-rod trav.mm : 12.70...12.80

2nd speed 1/min : 500

C-rod trav.mm : 13.60...13.70

4th speed 1/min : 1015

C-rod trav.mm : 13.10...13.30

compensator (LDA,ADA,ALDA)

#### 1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 13.60...13.70

#### Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 12.30...12.40

2nd pressure hPa : 410

C-rod trav.mm : 13.20...13.30

3rd pressure hPa : 250

C-rod trav.mm : 12.60...12.80

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : 700

Speed 1/min : 850

Del.quantity cm3/ : 84.5...86.5

1000H.: (82.0...89.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 59.5...61.5

1000H.: (57.5...63.5)

Remarks:

F06

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 4,1 D 2  
 Edition : 12.09.86  
 Superseded : 8.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 864 061  
 Injection pump  
 Pump designation : PES4A85D410/3RS2638  
 EP type number : 0 410 884 950  
 Governor  
 Governor design. : RSV325...1150A2C707-1L  
 Governor no. : 0 420 232 438

Customer-spec. information  
 Customer : KHD

Engine : BF4L913

1st version kW : 67.0  
 Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
 : (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing<sup>0</sup>CS: 0-90-180-270  
Tolerance + - : 0.50 (0.75)

#### BASIC SETTING

1st speed 1/mi: 1000  
-----  
Contr.-rod trav.mm: 12.70...12.80  
-----  
Del.quantity cm3/ : 8.1...8.2  
-----  
100H.: (7.9...8.4)  
-----  
Dispersion cm3/ : 0.3  
-----  
100H.: (0.4)  
-----  
2nd speed 1/min: 325.0  
Contr.-rod trav. m: 8.1...8.3  
Del.quantity cm3/ : 1.0...1.6  
100H.: (0.8...1.8)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

#### SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload  
Notch setting x : 4.25

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1000  
Charge press. hPa : 700  
Del.quantity cm3/ : 81.5...82.5  
1000H.: (79.5...84.5)  
Dispersion cm3/ : 3.00  
1000H.: (4.50)

#### HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 39...47  
Testing:  
1st c-rod trav.mm : 11.70  
Speed 1/min : 1040...1050  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1110...1140  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1175...1205

4th speed 1/min : 1340  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 17...25  
Setting point w/out aux. spring  
Speed 1/min : 325  
Contr.-rod trav.mm: 7.7

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 325  
C-rod trav.mm : 8.10...8.30  
C-rod trav.min : 2.00  
Speed 1/min : 655...715

#### TORQUE CONTROL

Dimension a mm : 1.00  
Torque-control curve - 1st version  
1st speed 1/min : 1000  
C-rod trav.mm : 12.70...12.80  
2nd speed 1/min : 500  
C-rod trav.mm : 13.70...13.80  
3rd speed 1/min : 800  
C-rod trav.mm : 13.30...13.50  
4th speed 1/min : 900  
C-rod trav.mm : 12.90...13.10

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 500  
Pressure hPa : 700  
Contr.-rod trav.mm: 13.70...13.80

#### Measurement

Speed 1/min : 500  
1st pressure hPa : -  
C-rod trav.mm : 12.10...12.20  
2nd pressure hPa : 450  
C-rod trav.mm : 13.30...13.40  
3rd pressure hPa : 290  
C-rod trav.mm : 12.50...12.70

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : 700  
Speed 1/min : 800  
Del.quantity cm3/ : 86.5...88.5  
1000H.: (84.0...91.0)  
Charge press. hPa : -  
Speed 1/min : 500  
Del.quantity cm3/ : 61.5...63.5  
1000H.: (59.5...65.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 4,1 D 1  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 864 062  
 Injection pump  
 Pump designation : PES4A85D410/3RS2638  
 EP type number : 0 410 884 950  
 Governor  
 Governor design. : RSV325...1150A2C707-  
 2L  
 Governor no. : 0 420 232 439

Customer-spec. information  
 Customer : KHD

Engine : BF4L913

1st version kW : 67.0  
 Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
 : (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing<sup>0</sup>CS: 0-90-180-270  
Tolerance + - : 0.50 (0.75)

#### BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 12.70...12.80

Del.quantity cm3/ : 8.1...8.2

100H.: (7.9...8.4)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 8.1...8.3

Del.quantity cm3/ : 1.0...1.6

100H.: (0.8...1.8)

Dispersion cm3/ : 0.2

100H.: (0.4)

#### SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 4.25

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 700

Del.quantity cm3/ : 81.5...82.5

1000H.: (79.5...84.5)

Dispersion cm3/ : 3.00

1000H.: (4.50)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 39...47

Testing:

1st c-rod trav.mm : 11.70

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1110...1140

3rd c-rod trav.mm : 4.00

Speed 1/min : 1175...1205

4th speed 1/min : 1340

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 7.7

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 325

C-rod trav.mm : 8.10...8.30

C-rod trav.mm : 2.00

Speed 1/min : 655...715

#### TORQUE CONTROL

Dimension a mm : 1.00

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 12.70...12.80

2nd speed 1/min : 500

C-rod trav.mm : 13.70...13.80

3rd speed 1/min : 800

C-rod trav.mm : 13.30...13.50

4th speed 1/min : 900

C-rod trav.mm : 12.90...13.10

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 13.70...13.80

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 12.10...12.20

2nd pressure hPa : 450

C-rod trav.mm : 13.30...13.40

3rd pressure hPa : 290

C-rod trav.mm : 12.50...12.70

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : 700

Speed 1/min : 800

Del.quantity cm3/ : 86.5...88.5

1000H.: (84.0...91.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 61.5...63.5

1000H.: (59.5...65.5)

Remarks:  
APPLICATION

Installation 2300



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 4,1 D 4  
Edition : 12.09.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 864 065  
  
Injection pump  
Pump designation : PES4A85D410/3RS2638  
EP type number : 0 410 884 950  
Governor  
Governor design. : RSV325...1400A8C540-2L  
Governor no. : 0 420 232 457

Customer-spec. information  
Customer : KHD

Engine : BF4L913

1st version kW : 35.0  
Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values \_\_\_\_\_

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
: (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 11.60...11.70

Del.quantity cm3/ : 7.0...7.1  
100H.: (6.8...7.3)

Dispersion cm3/ : 0.3  
100H.: (0.5)

2nd speed 1/min: 325.0  
Contr.-rod trav. m: 9.0...9.2  
Del.quantity cm3/ : 1.0...1.6  
100H.: (0.8...1.8)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload  
Notch setting x : 4.75

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1250  
Del.quantity cm3/ : 70.0...71.0  
1000H.: (68.0...73.0)  
Dispersion cm3/ : 3.00  
1000H.: (5.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 56...64

Testing:  
1st c-rod trav.mm : 10.60  
Speed 1/min : 1290...1300  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1325...1355  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1390...1420  
4th speed 1/min : 1560

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 7.7

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 325

C-rod trav.mm : 8.10...8.30

C-rod trav.mm : 2.00

Speed 1/min : 630...690

#### TORQUE CONTROL

Dimension a mm : 1.10

Torque-control curve - 1st version

1st speed 1/min : 1250

C-rod trav.mm : 11.60...11.70

2nd speed 1/min : 500

C-rod trav.mm : 12.70...12.80

4th speed 1/min : 1000

C-rod trav.mm : 12.20...12.40

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800

Del.quantity cm3/ : 66.0...68.0

1000H.: (63.5...70.5)

Speed 1/min : 1000

Del.quantity cm3/ : 66.0...68.0

1000H.: (63.5...70.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 4,1 G  
 Edition : 23.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 864 066  
 Injection pump  
 Pump designation : PES4AB0D410/3RS2717  
 EP type number : 0 410 884 045  
 Governor  
 Governor design. : RSV325...900A1C602-2  
 L  
 Governor no. : 0 420 232 448

Customer-spec. information  
 Customer : KHD

Engine : F4L913

1st version kW : 43.0  
 Speed 1/min: 1800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.10...2.20  
 : (2.05...2.25)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 880

Contr.-rod trav.mm: 10.20...10.30

Del.quantity cm3/ : 4.9...5.0

100H.: (4.8...5.2)

Dispersion cm3/ : 0.2

100H.: (0.4)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 7.9...8.1

Del.quantity cm3/ : 0.9...1.5

100H.: (0.7...1.6)

Dispersion cm3/ : 0.2

100H.: (0.3)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 4.25

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 880

Del.quantity cm3/ : 49.5...50.5

1000H.: (48.0...52.0)

Dispersion cm3/ : 2.50

1000H.: (4.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 43...51

Testing:

1st c-rod trav.mm : 9.20

Speed 1/min : 920...930

2nd c-rod trav.mm : 4.00

Speed 1/min : 945...975

4th speed 1/min : 1110

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 20...28

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 8.0

Speed 1/min : 325

C-rod trav.mm : 7.90...8.10

C-rod trav.mm : 2.00

Speed 1/min : 355...415

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 4,1 D 6  
Edition : 01.12.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 864 067  
Injection pump  
Pump designation : PES4A85D410/3RS2638  
EP type number : 0 410 884 950  
Governor  
Governor design. : RSV325...1400A8C661L  
Governor no. : 0 420 232 327

Customer-spec. information  
Customer : KHD

Engine : BF4L913

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
: (2.45...2.65)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1250  
Contr.-rod trav.mm: 12.60...12.70  
Del.quantity cm3/ : 8.3...8.4  
100H.: (8.1...8.6)  
Dispersion cm3/ : 0.3  
100H.: (0.5)  
2nd speed 1/min: 325.0  
Contr.-rod trav. m: 8.6...8.8  
Del.quantity cm3/ : 1.0...1.6  
100H.: (0.8...1.8)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload  
Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1250  
Del.quantity cm3/ : 83.5...84.5  
1000H.: (81.5...86.5)  
Dispersion cm3/ : 3.00  
1000H.: (5.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 53...61

Testing:  
1st c-rod trav.mm : 10.60  
Speed 1/min : 1290...1300  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1310...1340  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1325...1355  
4th speed 1/min : 1540  
C-rod trav.mm : 0.30...1.40

## LOWEST RATED SPEED I

Control-lever

position degrees: 14...22  
Setting point w/out aux. spring  
Speed 1/min : 325  
Contr.-rod trav.mm: 8.2

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 325  
C-rod trav.mm : 8.60...8.80  
C-rod trav.mm : 2.00  
Speed 1/min : 630...690

TORQUE CONTROL

Dimension a mm : 0.90  
Torque-control curve - 1st version  
1st speed 1/min : 1250  
C-rod trav.mm : 12.60...12.70  
2nd speed 1/min : 500  
C-rod trav.mm : 13.50...13.60  
4th speed 1/min : 1020  
C-rod trav.mm : 13.00...13.20

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 77.0...79.0  
1000H.: (74.5...81.5)  
Speed 1/min : 825  
Del.quantity cm3/ : 85.0...87.0  
1000H.: (82.5...89.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 5,9 D  
Edition : 12.09.86  
Superceeded : 1.86  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 866 104  
  
Injection pump  
Pump designation : PES6A90D210RS2628  
EP type number : 0 410 896 074  
Governor  
Governor design. : RSV325...1200AOC2140  
Governor no. : 0 420 232 372  
  
Customer-spec. information  
Customer : FORD/GB  
  
Engine : DOVER 363 T/C

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000  
  
Inlet press., bar : 1.00  
  
Calibrating nozzle-holder  
assembly : 0 681 343 009  
  
Opening  
pressure, bar : 172...175  
  
Test inj. tubing : 1 680 750 014  
  
Outside diameter  
x Wall thickness  
x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27  
  
Prestroke mm : 2.70...2.80  
                  : (2.65...2.85)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1175  
-----  
Contr.-rod trav.mm: 11.50...11.60  
-----  
Del.quantity cm3/ : 8.3...8.4  
100H.: (8.1...8.6)  
-----  
Dispersion cm3/ : 0.3  
100H.: (0.4)  
-----  
2nd speed 1/min: 350.0  
Contr.-rod trav. m: 5.2...5.4  
Del.quantity cm3/ : 0.5...1.1  
100H.: (0.3...1.3)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload  
Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1175  
Charge press. hPa : 700  
Del.quantity cm3/ : 83.5...84.5  
1000H.: (81.5...86.5)  
Dispersion cm3/ : 3.00  
1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 65...73

Testing:  
1st c-rod trav.mm : 10.50  
Speed 1/min : 1240...1250  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1360...1390  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1365...1395  
4th speed 1/min : 1540  
C-rod trav.mm : 0.30...1.40

# LOWEST RATED SPEED I

Control-lever

position degrees: 35...43

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 4.8

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 350

C-rod trav.mm : 5.20...5.40

C-rod trav.mm : 2.00

Speed 1/min : 490...550

Speed 1/min : 625

C-rod trav.mm max : 1.00

## TORQUE CONTRGL

Torque-control curve - 1st version

1st speed 1/min : 1175

C-rod trav.mm : 11.50...11.60

2nd speed 1/min : 500

C-rod trav.mm : 11.50...11.70

compensator (LDA,ADA,ALDA)

## 1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 11.50...11.60

## Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.10...10.20

2nd pressure hPa : 480

C-rod trav.mm : 11.10...11.20

3rd pressure hPa : 220

C-rod trav.mm : 10.30...10.50

## FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 49.0...51.0

1000H.: (47.0...53.0)

## Remarks:

At start of delivery, locating pin  
must latch into slit in pointer.



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 6,2 E 3  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 866 114  
 Injection pump  
 Pump designation : PES6A90D320/3RS2660  
 EP type number : 0 410 896 078  
 Governor  
 Governor design. : RSV325...1200AOC2182  
 -1R  
 Governor no. : 0 420 233 192

Customer-spec. information  
 Customer : MWM

Engine : TD226B-6

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values \_\_\_\_\_

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05  
 : (2.90...3.10)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : -1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 Difference ° CS : 3.50...4.50

## BASIC SETTING

1st speed 1/mi: 1200  
 -----  
 Contr.-rod trav.mm: 12.00...12.10  
 -----  
 Del.quantity cm3/ : 9.7...9.8  
 -----  
 100H.: (9.5...10.0)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.4)  
 -----

2nd speed 1/min: 325.0  
 Contr.-rod trav. m: 6.9...7.1  
 Del.quantity cm3/ : 0.8...1.4  
 100H.: (0.6...1.6)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 3.25

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1200  
 Charge press. hPa : 700  
 Del.quantity cm3/ : 97.5...98.5  
 1000H.: (95.5...100.5)  
 Dispersion cm3/ : 3.00  
 1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 41...49

Testing:  
 1st c-rod trav.mm : 11.00  
 Speed 1/min : 1240...1250

2nd c-rod trav.mm : 4.00  
Speed 1/min : 1275...1305  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1300...1330  
4th speed 1/min : 1465  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 14...22  
Setting point w/out aux. spring  
Speed 1/min : 325  
Contr.-rod trav.mm: 6.5

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 325  
C-rod trav.mm : 6.90...7.10  
C-rod trav.mm : 2.00  
Speed 1/min : 495...555

#### TORQUE CONTROL

Dimension a mm : 0.30  
Torque-control curve - 1st version  
1st speed 1/min : 1200  
C-rod trav.mm : 12.00...12.10  
2nd speed 1/min : 500  
C-rod trav.mm : 12.30...12.40  
3rd speed 1/min : 1115  
C-rod trav.mm : 12.10...12.30

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 500  
Pressure hPa : 700  
Contr.-rod trav.mm: 12.30...12.40

#### Measurement

Speed 1/min : 500  
1st pressure hPa : -  
C-rod trav.mm : 10.10...10.20  
2nd pressure hPa : 275  
C-rod trav.mm : 11.70...11.80  
3rd pressure hPa : 80  
C-rod trav.mm : 10.60...10.80

#### FUEL-DELIVERY CHARACTERISTICS

##### 1st version

Charge press. hPa : 275  
Speed 1/min : 500  
Del.quantity cm3/ : 83.0...85.0  
1000H.: (80.5...87.5)  
Charge press. hPa : -  
Speed 1/min : 500

Del.quantity cm3/ : 61.0...62.0  
1000H.: (59.0...64.0)

Remarks:  
APPLICATION

Tractor (tractor engines)

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VAL 2,7 A  
 Edition : 12.09.86  
 Superseded : 12.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 873 037  
 Injection pump  
 Pump designation : PES3A95D320RS2711  
 EP type number : 0 410 893 998  
 Governor  
 Governor design. : RSV325...1175A0C2178  
 -3R  
 Governor no. : 0 420 233 206

Customer-spec. information  
 Customer : VALMET

Engine : 309 DS4

1st version kW : 45.0  
 Speed 1/min: 2350

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values \_\_\_\_\_

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
 : (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 2- 3

SD ang. spacing°CS: 0-120-240  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 & c-rod tray max. : 21.0  
 Difference ° CS : 4.50...5.50

## BASIC SETTING

1st speed 1/mi: 1210

Contr.-rod trav.mm: 10.20...10.30

Del.quantity cm3/ : 7.5...7.7  
 100H.: (7.3...7.9)

Dispersion cm3/ : 0.3  
 100H.: (0.6)

2nd speed 1/min: 325.0  
 Contr.-rod trav. m: 6.1...6.3  
 Del.quantity cm3/ : 1.7...2.5  
 100H.: (1.4...2.7)  
 Dispersion cm3/ : 0.3  
 100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 4.75

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1210  
 Del.quantity cm3/ : 75.5...77.5  
 1000H.: (73.5...79.5)  
 Dispersion cm3/ : 3.50  
 1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 41...49

Testing:

1st c-rod trav.mm : 9.20  
Speed 1/min : 1250...1260  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1325...1355  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1330...1360  
4th speed 1/min : 1500  
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 20...28  
Setting point w/out aux. spring  
Speed 1/min : 325  
Contr.-rod trav.mm: 5.7

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 325  
C-rod trav.mm : 6.10...6.30  
C-rod trav.mm : 2.00  
Speed 1/min : 435...495

TORQUE CONTROL

Dimension a mm : 1.10  
Torque-control curve - 1st version  
1st speed 1/min : 1210  
C-rod trav.mm : 10.20...10.30  
2nd speed 1/min : 500  
C-rod trav.mm : 11.30...11.40  
4th speed 1/min : 985  
C-rod trav.mm : 10.80...11.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 66.5...69.5  
1000H.: (64.0...72.0)  
Dispersion cm3/ : -  
1000H.: (7.00)

Remarks:

APPLICATION

Tractor (tractor engines)

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 3,8 M  
Edition : 12.09.86  
Superceeded : 3.85  
Calibrating oil : ISO-4113  
Combination no. : 0 400 874 219  
Injection pump  
Pump designation : PES4A90D410RS2294  
EP type number : 0 410 894 011  
Governor  
Governor design. : RSV350...750AOC764L  
Governor no. : 0 420 232 396

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 314

1st version kW : 30.9  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25  
(2.10...2.30)

Contr.-rod trav.mm: 9.00...12.00

F25

Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 9.40...9.50

Del.quantity cm3/ : 4.7...4.8

100H.: (4.5...5.0)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.2...6.4

Del.quantity cm3/ : 0.5...1.1

100H.: (0.3...1.3)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 3,75

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 47.0...48.0

1000H.: (45.0...50.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 31...39

Testing:

1st c-rod trav.mm : 8.40

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min : 788...801

4th speed 1/min : 870.0

C-rod trav.mm : 0,3...1,4

## LOWEST RATED SPEED I

Control-lever  
position degrees: 19...27  
Setting point w/out aux. spring  
Speed 1/min : 350  
Contr.-rod trav.mm: 6.3  
Speed 1/min : 350  
C-rod trav.mm : 6,20...6,40  
C-rod trav.mm : 2.00  
Speed 1/min : 385...415

SET IDLE AUXILIARY SPRING  
Contr.-rod trav.mm: 2.00

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 3,8 N 14  
 Edition : 12.09.86  
 Superseded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 874 227  
 Injection pump  
 Pump designation : PES4A90D410RS2570  
 EP type number : 0 410 894 023  
 Governor  
 Governor design. : RSV350...1200A2C1139  
 -1L  
 Governor no. : 0 420 232 401

Customer-spec. information  
 Customer : DB

Engine : OM 314

1st version kW : 48.0  
 Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
 : (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
 Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 10.40...10.50

Del.quantity cm3/ : 4.9...5.0

100H.: (4.7...5.2)

Dispersion cm3/ : 0.3

100H.: (0.2)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 8.9...9.5

Del.quantity cm3/ : 1.1...1.3

100H.: (0.9...1.5)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Del.quantity cm3/ : 49.5...50.5

1000H.: (47.5...52.5)

Dispersion cm3/ : 3.00

1000H.: (2.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 45...53

Testing:

1st c-rod trav.mm : 9.40

Speed 1/min : 1235...1240

2nd c-rod trav.mm : 4.00

Speed 1/min : 1293...1306

3rd c-rod trav.mm : 4.00

Speed 1/min : 1340...1370

4th speed 1/min : 1450

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 9.20

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 350

C-rod trav.mm : 9.10...9.30

C-rod trav.mm : 2.00

Speed 1/min : 535...595

#### TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1200

C-rod trav.mm : 10.40...10.50

2nd speed 1/min : 500

C-rod trav.mm : 11.80...12.00

3rd speed 1/min : 900

C-rod trav.mm : 11.10...11.50

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 45.0...47.0

1000H.: (42.5...49.5)

Dispersion cm3/ : -

1000H.: (5.50)

Speed 1/min : 900

Del.quantity cm3/ : 49.0...51.0

1000H.: (46.5...53.5)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 3.8 N 7  
Edition : 12.09.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 874 232  
  
Injection pump  
Pump designation : PES4A90D410RS2570  
EP type number : 0 410 894 023  
Governor  
Governor design. : RSV350...1200A2C1147  
L  
Governor no. : 0 420 232 402

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM314A

1st version kW : 63.0  
Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1180  
-----  
Contr.-rod trav.mm: 11.80...11.90  
-----  
Del.quantity cm3/ : 6.3...6.4  
-----  
100H.: (6.1...6.6)  
-----  
Dispersion cm3/ : 0.2  
-----  
100H.: (0.2)  
-----  
2nd speed 1/min: 350.0  
Contr.-rod trav. m: 8.8...9.4  
Del.quantity cm3/ : 1.1...1.3  
100H.: (0.9...1.5)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload  
Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1180  
Del.quantity cm3/ : 63.5...64.5  
1000H.: (61.5...66.5)  
Dispersion cm3/ : 2.00  
1000H.: (2.50)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 45...53

Testing:  
1st c-rod trav.mm : 10.80  
Speed 1/min : 1235...1240  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1309...1322  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1365...1395  
4th speed 1/min : 1475

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

##### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 18.00  
Speed 1/min : 350  
C-rod trav.mm : 9.00...9.20  
C-rod trav.mm : 2.00  
Speed 1/min : 575...635

##### TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1180  
C-rod trav.mm : 11.80...11.90  
2nd speed 1/min : 600  
C-rod trav.mm : 12.60...12.70  
3rd speed 1/min : 900  
C-rod trav.mm : 12.10...12.50

##### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 57.0...59.0  
1000H.: (55.0...61.0)  
1000H.: (5.50)  
Speed 1/min : 900  
Del.quantity cm3/ : 61.0...63.0  
1000H.: (58.5...65.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 3,8 M 10  
 Edition : 12.09.86  
 Superceeded : 5.84  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 874 237  
 Injection pump  
 Pump designation : PES4A90D41ORS2570  
 EP type number : 0 410 894 023  
 Governor  
 Governor design. : RSV350...1300A2C1126  
 -2L  
 Governor no. : 0 420 232 403

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 314

1st version kW : 55.0  
 Speed 1/min: 2600

## TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
 : (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
 Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1300  
 Contr.-rod trav.mm: 10.90...11.00

Del.quantity cm3/ : 6.0...6.1  
 100H.: (5.8...6.3)

Dispersion cm3/ : 0.3  
 100H.: (0.4)

2nd speed 1/min: 350  
 Contr.-rod trav. m: 8.4...9.0  
 Del.quantity cm3/ : 1.1...1.3  
 100H.: (0.9...1.5)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1300  
 Del.quantity cm3/ : 60.0...61.0  
 1000H.: (58.0...63.0)  
 Dispersion cm3/ : 3.00  
 1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 42...50

Testing:  
 1st c-rod trav.mm : 9.90  
 Speed 1/min : 1340...1345  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1386...1399  
 3rd c-rod trav.mm : 4.00  
 Speed 1/min : 1435...1465  
 4th speed 1/min : 1550

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever  
position degrees: -

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 350  
C-rod trav.mm : 8.60...8.80  
C-rod trav.mm : 2.00  
Speed 1/min : 560...620

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300  
C-rod trav.mm : 10.90...11.00  
2nd speed 1/min : 500  
C-rod trav.mm : 11.60...11.80  
3rd speed 1/min : 700  
C-rod trav.mm : 11.20...11.50

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 48.0...52.0  
1000H.: (45.5...54.5)  
Dispersion cm3/ : -  
1000H.: (5.50)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : LIE 5,6 A  
 Edition : 12.09.86  
 Superceeded : 4.86  
 Calibrating oil : ISO-4113

Combination no. : 0 400 874 238

Injection pump  
 Pump designation : PES4A95D41ORS2685  
 EP type number : 0 410 894 996  
 Governor  
 Governor design. : RSV400...1000A1C2187  
 L  
 Governor no. : 0 420 232 387

Customer-spec. information  
 Customer : LIEBHERR

Engine : D904 NA

1st version kW : 70.0  
 Speed 1/min: 2000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 40...45

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter  
 x Wall thickness : 6.00X2.00X600  
 x Length mm

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80  
 : (2.65...2.85)

G05

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
 Tolerance + - : 0.50 (0.75)

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 Difference °CS : 4.00...5.00

## BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 10.20...10.30

Del.quantity cm3/ : 8.6...8.8

100H.: (8.4...9.0)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 400.0

Contr.-rod trav. m: 6.1...6.3

Del.quantity cm3/ : 1.0...1.6

100H.: (0.7...1.8)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 3.50

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 86.0...88.0

1000H.: (84.0...90.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 45...53

Testing:

1st c-rod trav.mm : 9.20

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00  
Speed 1/min : 1050...1080  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1060...1090  
4th speed 1/min : 1230  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 17...26  
Setting point w/out aux. spring  
Speed 1/min : 400  
Contr.-rod trav.mm: 5.7

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 400  
C-rod trav.mm : 6.10...6.30  
C-rod trav.mm : 2.00  
Speed 1/min : 450...510

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1000  
C-rod trav.mm : 10.20...10.30  
2nd speed 1/min : 550  
C-rod trav.mm : 10.20...10.40  
5th speed 1/min : 430  
C-rod trav.mm : 11.40...12.00

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 80.5...83.5  
1000H.: (78.0...86.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 B  
Edition : 22.10.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113  
Combination no. : 0 400 874 240  
Injection pump  
Pump designation : PES4A90D41ORS2666  
EP type number : 0 410 894 029  
Governor  
Governor design. : RSV300...1400AOC2006  
-1L  
Governor no. : 0 420 232 449

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 66.0  
Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
: (2.20...2.40)

Contr.-rod trav mm: 9.00...12.00  
Cam sequence : 1- 3- 4- 2

SD ang. spacing°CS: 0-90-180-270  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1380  
Contr.-rod trav.mm: 10.40...10.50  
Del.quantity cm3/ : 6.3...6.4  
100H.: (6.1...6.6)  
Dispersion cm3/ : 0.3  
100H.: (0.4)  
2nd speed 1/min: 300.0  
Contr.-rod trav. m: 7.8...8.0  
Del.quantity cm3/ : 0.6...1.0  
100H.: (0.4...1.2)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Cont.-rod travelmm: 0.30...0.10

Governor-spring reload  
Notch setting x : 4.50

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1380  
Del.quantity cm3/ : 63.0...64.0  
1000H.: (61.0...66.0)  
Dispersion cm3/ : 3.00  
1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 59...67

Testing:  
1st c-rod trav.mm : 9.40  
Speed 1/min : 1430...1440  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1480...1510  
4th speed 1/min : 1575  
C-rod trav.mm : 0.30...1.70

# LOWEST RATED SPEED I

Control-lever

position degrees: 24...32

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 7.9

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 300

C-rod trav.mm : 7.80...8.00

C-rod trav.mm : 2.00

Speed 1/min : 420...480

## SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

## TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1380

C-rod trav.mm : 10.40...10.50

2nd speed 1/min : 500

C-rod trav.mm : 11.70...11.80

3rd speed 1/min : 900

C-rod trav.mm : 11.10...11.30

## FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 52.0...54.0

1000H.: (49.5...56.5)

Dispersion cm3/ : -

1000H.: (5.50)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 M 9  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 400 876 108  
Injection pump  
Pump designation : PES6A80D41ORS2085X  
EP type number : 0 410 886 045  
Governor  
Governor design. : RSV350...1400A2C1001  
L  
Governor no. : 0 420 232 464

Customer-spec. information  
Customer : DB

Engine : OM352

1st version kW : 66.0  
Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25  
: (2.10...2.30)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 8.50...8.60

Del.quantity cm3/ : 4.1...4.2

100H.: (4.0...4.4)

Dispersion cm3/ : 0.2

100H.: (0.3)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.4...7.6

Del.quantity cm3/ : 1.0...1.4

100H.: (0.8...1.5)

Dispersion cm3/ : 0.2

100H.: (0.3)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 41.5...42.5

1000H.: (40.0...44.0)

Dispersion cm3/ : 2.00

1000H.: (3.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 46...54

Testing:

1st c-rod trav.mm : 7.50

Speed 1/min : 1440...1450

2nd c-rod trav.mm : 4.00

Speed 1/min : 1455...1485

3rd c-rod trav.mm : 0.30...1.40

Speed 1/min : 1725

4th speed 1/min : 1545...1575

C-rod trav.mm : 4.00

SET IDLE CONTROL-LEVER

Control-lever  
position degrees: -

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 7.5

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

C-rod trav.mm : 2.00

Speed 1/min : 730...790

TORQUE CONTROL

Dimension a mm : 0.50

Torque-control curve - 1st version

1st speed 1/min : 1400

C-rod trav.mm : 8.50...8.60

2nd speed 1/min : 500

C-rod trav.mm : 9.00...9.10

3rd speed 1/min : 700

C-rod trav.mm : 8.70...8.90

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm<sup>3</sup>/ : 40.5...42.5

1000H.: (38.5...44.5)

Remarks:

APPLICATION

Unimog

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 M 10  
 Edition : 12.09.86  
 Superseded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 188  
 Injection pump  
 Pump designation : PES6A80D41ORS2085X  
 EP type number : 0 410 886 045  
 Governor  
 Governor design. : RSV350...1400A2C1052  
 L  
 Governor no. : 0 420 232 406  
 Customer-spec. information  
 Customer : DB

Engine : OM352

1st version kW : 80.9  
 Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values ----

## START OF DELIVERY

Prestroke mm : 2.15...2.25  
 : (2.10...2.30)  
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1400  
 -----  
 Contr.-rod trav.mm: 9.00...9.10  
 -----  
 Del.quantity cm3/ : 5.2...5.3  
 -----  
 100H.: (5.0...5.4)  
 -----  
 Dispersion cm3/ : 0.2  
 -----  
 100H.: (0.4)  
 -----

2nd speed 1/min: 350.0  
 Contr.-rod trav. m: 6.6...7.2  
 Del.quantity cm3/ : 1.0...1.2  
 100H.: (0.8...1.3)  
 Dispersion cm3/ : 0.2  
 100H.: (0.3)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1400  
 Del.quantity cm3/ : 52.0...53.0  
 100H.: (50.5...54.5)  
 Dispersion cm3/ : 2.50  
 100H.: (4.00)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 46...54

Testing:  
 1st c-rod trav.mm : 8.00  
 Speed 1/min : 1435...1440  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1473...1486  
 3rd c-rod trav.mm : 0.30...1.40  
 Speed 1/min : 1680  
 4th speed 1/min : 1500...1530  
 C-rod trav.mm : 4.00

LOWEST RATED SPEED I

Control-lever

position degrees: -

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 6.90

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 350

C-rod trav.mm : 6.80...7.00

C-rod trav.mm : 2.00

Speed 1/min : 600...660

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1400

C-rod trav.mm : 9.00...9.10

2nd speed 1/min : 500

C-rod trav.mm : 9.80...9.90

4th speed 1/min : 950

C-rod trav.mm : 9.10...9.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 47.0...49.0

1000H.: (45.0...51.0)

Speed 1/min : 850

Del.quantity cm3/ : 50.0...53.0

1000H.: (48.0...55.0)

Remarks:

: -

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 9,6 K 1  
 Edition : 12.09.86  
 Superceeded : 9.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 198  
 Injection pump  
 Pump designation : PES6A95D410RS2416  
 EP type number : 0 410 896 961  
 Governor  
 Governor design. : RSV300...1150A8C616D  
 L  
 Governor no. : 0 420 232 323

Customer-spec. information  
 Customer : KHD

Engine : F6L413FR

1st version kW : 140.0  
 Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00  
 : (1.85...2.05)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1140

Contr.-rod trav.mm: 10.00...10.10

Del.quantity cm3/ : 9.8...10.0

100H.: (9.6...10.2)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.9...6.1

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 5.75

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1140

Del.quantity cm3/ : 98.0...100.0

1000H.: (96.0...102.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 54...62

Testing:

1st c-rod trav.mm : 9.00

Speed 1/min : 1180...1190

2nd c-rod trav.mm : 4.00

Speed 1/min : 1215...1245

3rd c-rod trav.mm : 4.00

Speed 1/min : 1250...1280

4th speed 1/min : 1410

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 20...28

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 300

C-rod trav.mm : 5.90...6.10

C-rod trav.mm : 2.00

Speed 1/min : 535...595

#### TORQUE CONTROL

Dimension a mm : 0.40

Torque-control curve - 1st version

1st speed 1/min : 1140

C-rod trav.mm : 10.00...10.10

2nd speed 1/min : 500

C-rod trav.mm : 10.40...10.50

4th speed 1/min : 750

C-rod trav.mm : 10.20...10.30

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 650

Del.quantity cm3/ : 93.5...96.5

1000H.: (91.0...99.0)

#### Remarks:

APPLICATION

Installation 2300

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 Q 18  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 218  
 Injection pump  
 Pump designation : PES6A90D410RS2293  
 EP type number : 0 410 896 031  
 Governor  
 Governor design. : RSV350...1400AOC1080  
 L  
 Governor no. : 0 420 232 408

Customer-spec. information  
 Customer : DB

Engine : OM 352

1st version kW : 92.0  
 Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

START OF DELIVERY  
 Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25  
 : (2.10...2.30)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 9.70...9.80

Del.quantity cm3/ : 6.3...6.4

100H.: (6.1...6.6)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.6...7.2

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload  
 Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 63.0...64.0

1000H.: (61.0...66.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 68...76

Testing:

1st c-rod trav.mm : 8,70

Speed 1/min : 1440...1445

2nd c-rod trav.mm : 4,00

Speed 1/min : 1473...1486

3rd c-rod trav.mm : 0.30...1.70

Speed 1/min : 1600

4th speed 1/min : 1510...1540

C-rod trav.mm : 4.00

LOWEST RATED SPEED I

Control-lever  
position degrees: -

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 350  
C-rod trav.mm : 6.80...7.00  
C-rod trav.mm : 2.00  
Speed 1/min : 500...560

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1400  
C-rod trav.mm : 9.70...9.80  
2nd speed 1/min : 600  
C-rod trav.mm : 9.80...10.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 51.0...53.0  
1000H.: (49.0...55.0)  
Speed 1/min : 900  
Del.quantity cm3/ : 57.0...59.0  
1000H.: (54.5...61.5)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 Q 4  
 Edition : 12.09.86  
 Superceeded : 8.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 256  
 Injection pump  
 Pump designation : PES6A90D410RS2293  
 EP type number : 0 410 896 031  
 Governor  
 Governor design. : RSV350...1300AOC1101  
 L  
 Governor no. : 0 420 232 410

Customer-spec. information  
 Customer : DB

Engine : OM352A

1st version kW : 110.3  
 Speed 1/min: 2600

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness : 6.00X2.00X600  
 x Length mm

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25  
 : (2.10...2.30)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 10.60...10.70

Del.quantity cm3/ : 7.1...7.2

100H.: (6.9...7.4)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.7...7.3

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 71.0...72.0

1000H.: (69.0...74.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 65...73

Testing:

1st c-rod trav.mm : 9.60

Speed 1/min : 1335...1340

2nd c-rod trav.mm : 4.00

Speed 1/min : 1383...1396

3rd c-rod trav.mm : 0.30...1.40

Speed 1/min : 1500

4th speed 1/min : 1415...1445

C-rod trav.mm : 4.00

LOWEST RATED SPEED I

Control-lever

position degrees: -

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 7.0

Speed 1/min : 350

C-rod trav.mm : 6.90...7.10

C-rod trav.mm : 2.00

Speed 1/min : 450...510

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300

C-rod trav.mm : 10.60...10.70

2nd speed 1/min : 500

C-rod trav.mm : 11.30...11.40

3rd speed 1/min : 800

C-rod trav.mm : 10.90...11.10

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/ : 62.0...64.0

1000H.: (60.0...66.0)

Remarks:

APPLICATION

Unimog

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 Q 3  
 Edition : 12.09.86  
 Superceeded : 9.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 260  
 Injection pump  
 Pump designation : PES6A90D410RS2293  
 EP type number : 0 410 896 031  
 Governor  
 Governor design. : RSV350...1300AOC1105  
 L  
 Governor no. : 0 420 232 413

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 352 A

1st version kW : 91.9  
 Speed 1/min: 2600

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 003

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25  
 : (2.10...2.30)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 10.00...10.10

Del.quantity cm3/ : 6.7...6.8

100H.: (6.5...7.0)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.6...7.2

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

Governor-spring reload  
 Notch setting x : 5.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 67.0...68.0

1000H.: (65.0...70.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 61...69

Testing:

1st c-rod trav.mm : 9.00

Speed 1/min : 1340...1345

2nd c-rod trav.mm : 4.00

Speed 1/min : 1380...1393

3rd c-rod trav.mm : 0.30...1.70

Speed 1/min : 1540

4th speed 1/min : 1410...1440

C-rod trav.mm : 4.00

# LOWEST RATED SPEED I

Control-lever  
position degrees: -

## Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.00  
Speed 1/min : 350  
C-rod trav.mm : 6.80...7.00  
C-rod trav.mm : 2.00  
Speed 1/min : 460...520

## TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300  
C-rod trav.mm : 10.00...10.10  
2nd speed 1/min : 500  
C-rod trav.mm : 10.30...10.50  
3rd speed 1/min : 750  
C-rod trav.mm : 10.30...10.40  
4th speed 1/min : 1140  
C-rod trav.mm : 10.00...10.10

## FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 850  
Del.quantity cm<sup>3</sup>/ : 60.0...63.0  
1000H.: (57.5...65.5)

## Remarks:

APPLICATION

Unimog

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 S 1  
 Edition : 12.09.86  
 Superseded : 9.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 263  
 Injection pump  
 Pump designation : PES6A90D41ORS2293  
 EP type number : 0 410 896 031  
 Governor  
 Governor design. : RSV350...1300A0C1107  
 L  
 Governor no. : 0 420 232 415

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 352

1st version kW : 80.9  
 Speed 1/min: 2600

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25  
 : (2.10...2.30)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 8.70...8.80

Del.quantity cm3/ : 5.0...5.1

100H.: (4.8...5.3)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.6...7.2

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1300

Del.quantity cm3/ : 50.0...51.0

1000H.: (48.0...53.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

Testing:

1st c-rod trav.mm : 7.70

Speed 1/min : 1340...1345

2nd c-rod trav.mm : 4.00

Speed 1/min : 1370...1383

3rd c-rod trav.mm : 0.30...1.70

Speed 1/min : 1550

4th speed 1/min : 1390...1420

C-rod trav.mm : 4.00

LOWEST RATED SPEED I

Control-lever  
position degrees: -

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 350  
C-rod trav.mm : 6.80...7.00  
C-rod trav.mm : 2.00  
Speed 1/min : 485...545

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300  
C-rod trav.mm : 8.70...8.80  
2nd speed 1/min : 500  
C-rod trav.mm : 9.90...10.00  
3rd speed 1/min : 800  
C-rod trav.mm : 9.70...9.90

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 47.5...49.5  
1000H.: (45.0...52.0)  
Speed 1/min : 900  
Del.quantity cm3/ : 50.5...53.5  
1000H.: (48.0...56.0)

Remarks:

APPLICATION

Tractor (tractor engines)

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 V 11  
 Edition : 12.09.86  
 Superceeded : 9.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 293  
 Injection pump  
 Pump designation : PES6A90D41ORS2596  
 EP type number : 0 410 896 073  
 Governor  
 Governor design. : RSV350...1400A0C1141  
 L  
 Governor no. : 0 420 232 423

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM352A

1st version kW : 123.0  
 Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 7.4...7.5

100H.: (7.2...7.7)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.8...8.4

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Charge press. hPa : 700

Del.quantity cm3/ : 74.0...75.0

1000H.: (72.0...77.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 66...74

Testing:

1st c-rod trav.mm : 10.90

Speed 1/min: 1435...1440

2nd c-rod trav.mm : 4.00

Speed 1/min: 1475...1488

3rd c-rod trav.mm : 4.00

Speed 1/min: 1520...1550

4th speed 1/min : 1680  
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I  
Control-lever  
position degrees: -

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 16.00  
Speed 1/min : 350  
C-rod trav.mm : 8.00...8.20  
C-rod trav.mm : 2.00  
Speed 1/min : 580...640

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1400  
C-rod trav.mm : 11.90...12.00  
2nd speed 1/min : 900  
C-rod trav.mm : 13.10...13.20  
4th speed 1/min : 1260  
C-rod trav.mm : 11.90...12.00

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500  
Pressure hPa : 700  
Contr.-rod trav.mm: 13.10...13.20

Measurement

Speed 1/min : 500

1st pressure hPa : -  
C-rod trav.mm : 11.30...11.40  
2nd pressure hPa : 275  
C-rod trav.mm : 11.70...11.80  
3rd pressure hPa : 500  
C-rod trav.mm : 12.50...12.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700  
Speed 1/min : 900  
Del.quantity cm3/ : 75.0...78.0  
1000H.: (72.5...80.5)  
Charge press. hPa : -  
Speed 1/min : 500  
Del.quantity cm3/ : 50.0...51.0  
1000H.: (48.0...53.0)

Remarks:

Latching at 0.45 bar...0.55 bar.

Unlatching at 0.25 bar...0.35 bar.



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 W 9  
 Edition : 12.09.86  
 Superceeded : 8.82  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 301  
 Injection pump  
 Pump designation : PES6A90D41ORS2569  
 EP type number : 0 410 896 071  
 Governor  
 Governor design. : RSV350...1400A0B2098  
 L  
 Governor no. : 0 420 232 249

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 352

1st version kW : 96.0  
 Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
 : (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1380

Contr.-rod trav.mm: 12.40...12.50

Del.quantity cm3/ : 6.2...6.3

100H.: (6.0...6.5)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 10.0...10.2

Del.quantity cm3/ : 0.9...1.5

100H.: (0.7...1.7)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1380

Del.quantity cm3/ : 62.0...63.0

1000H.: (60.0...65.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 11.40

Speed 1/min : 1420...1430

2nd c-rod trav.mm : 4.00

Speed 1/min : 1500...1530

4th speed 1/min : 1625

C-rod trav.mm : 0.30...1.70

# LOWEST RATED SPEED I

Control-lever

position degrees: 26...34

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 8.0

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 350

C-rod trav.mm : 7.90...8.10

C-rod trav.mm : 2.00

Speed 1/min : 470...530

## SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

## TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1380

C-rod trav.mm : 12.40...12.50

2nd speed 1/min : 600

C-rod trav.mm : 13.50...13.60

3rd speed 1/min : 900

C-rod trav.mm : 12.90...13.20

## FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 900

Del.quantity cm3/ : 60.5...63.5

1000H.: (58.0...66.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 V 16  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 310  
 Injection pump  
 Pump designation : PES6A90D410RS2596  
 EP type number : 0 410 896 073  
 Governor  
 Governor design. : RSV350...1200AOC1148  
 -1L  
 Governor no. : 0 420 232 456

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM352A

1st version kW : 110.0  
 Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1180

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 7.3...7.4  
 100H.: (7.1...7.6)

Dispersion cm3/ : 0.3  
 100H.: (0.5)

2nd speed 1/min: 350.0  
 Contr.-rod trav. m: 8.6...8.8  
 Del.quantity cm3/ : 1.2...1.6  
 100H.: (1.0...1.8)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 4.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1180  
 Charge press. hPa : 900  
 Del.quantity cm3/ : 73.0...74.0  
 1000H.: (71.0...76.0)  
 Dispersion cm3/ : 3.00  
 1000H.: (5.00)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 65...73

Testing:  
 1st c-rod trav.mm : 11.10  
 Speed 1/min : 1240...1245  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1301...1314  
 3rd c-rod trav.mm : 4.00  
 Speed 1/min : 1335...1365

4th speed 1/min : 1460  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

##### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 350  
C-rod trav.mm : 8.60...8.80  
C-rod trav.mm : 2.00  
Speed 1/min : 510...570

#### TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1180  
C-rod trav.mm : 12.10...12.20  
2nd speed 1/min : 725  
C-rod trav.mm : 13.60...13.70  
3rd speed 1/min : 900  
C-rod trav.mm : 13.00...13.20

compensator (LDA,ADA,ALDA)

#### 1st version

##### Setting

Speed 1/min : 500  
Pressure hPa : 900  
Contr.-rod trav.mm: 13.50...13.60

##### Measurement

Speed 1/min : 500  
1st pressure hPa : -  
C-rod trav.mm : 11.50...11.60  
2nd pressure hPa : 450  
C-rod trav.mm : 12.60...12.70  
3rd pressure hPa : 235  
C-rod trav.mm : 12.00...12.20

#### FUEL-DELIVERY CHARACTERISTICS

##### 1st version

Charge press. hPa : 900  
Speed 1/min : 725  
Del.quantity cm3/ : 80.0...82.0  
1000H.: (77.5...84.5)  
Charge press. hPa : 900  
Speed 1/min : 900  
Del.quantity cm3/ : 74.0...78.0  
1000H.: (71.5...80.5)  
Dispersion cm3/ : -  
1000H.: (5.50)  
Charge press. hPa : -  
Speed 1/min : 500  
Del.quantity cm3/ : 51.0...53.0  
1000H.: (49.0...55.0)

#### Remarks:

Latching at 0.75 bar...0.85 bar.

Unlatching at 0.25 bar...0.35 bar.

#### APPLICATION

Unimog

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 X 9  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113

Combination no. : 0 400 876 311

Injection pump  
 Pump designation : PES6A90D410RS2569  
 EP type number : 0 410 896 071  
 Governor  
 Governor design. : RSV350...1250A0C1130  
 -1L  
 Governor no. : 0 420 232 427

Customer-spec. information  
 Customer : DB

Engine : OM 352

1st version kW : 92.0

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
 : (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 11.50...11.60

Del.quantity cm3/ : 6.7...6.8

100H.: (6.5...7.0)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 8.1...8.7

Del.quantity cm3/ : 1.0...1.2

100H.: (0.8...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : -

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Del.quantity cm3/ : 67.0...68.0

1000H.: (65.0...70.0)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 56...64

## Testing:

1st c-rod trav.mm : 10.5

Speed 1/min : 1290...1295

2nd c-rod trav.mm : 4.00

Speed 1/min : 1347...1360

3rd c-rod trav.mm : 4.00

Speed 1/min : 1410...1450

4th speed 1/min : 1550

C-rod trav.mm : 0.30...1.70

## LOWEST RATED SPEED I

### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.00  
Speed 1/min : 350  
C-rod trav.mm : 8.30...8.50  
C-rod trav.mm : 2.00  
Speed 1/min : 580...640

### TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1250  
C-rod trav.mm : 11.50...11.60  
2nd speed 1/min : 600  
C-rod trav.mm : 12.00...12.10  
3rd speed 1/min : 1050  
C-rod trav.mm : 11.60...11.80

### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 56.0...58.0  
1000H.: (53.5...60.5)  
Speed 1/min : 850  
Del.quantity cm3/ : 66.0...68.0  
1000H.: (63.5...70.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 Q 8  
 Edition : 12.09.86  
 Superceeded : 9.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 316  
 Injection pump  
 Pump designation : PES6A90D410RS2293  
 EP type number : 0 410 896 031  
 Governor  
 Governor design. : RSV350...1200AOC1101  
 -1L  
 Governor no. : 0 420 232 428

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 352

1st version kW : 70.0

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25  
 : (2.10...2.30)  
 Contr.-rod trav.mm: 9.00...12.00

H03

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1200  
 -----  
 Contr.-rod trav.mm: 8.40...8.50  
 -----  
 Del.quantity cm3/ : 4.4...4.5  
 -----  
 100H.: (4.2...4.7)  
 -----  
 Dispersion cm3/ : 0.3  
 -----  
 100H.: (0.4)  
 -----  
 2nd speed 1/min: 350.0  
 Contr.-rod trav. m: 6.9...7.1  
 Del.quantity cm3/ : 1.0...1.2  
 100H.: (0.8...1.4)  
 Dispersion cm3/ : 0.2  
 100H.: (0.4)

## SLEEVE POSITION

Control-lever position  
 Degree: -3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 6.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1200  
 Del.quantity cm3/ : 44.0...45.0  
 1000H.: (42.0...47.0)  
 Dispersion cm3/ : 3.00  
 1000H.: (4.50)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 60...68

Testing:  
 1st c-rod trav.mm : 7.40  
 Speed 1/min : 1235...1240  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1265...1278  
 3rd c-rod trav.mm : 0.30...1.40  
 Speed 1/min : 1400  
 4th speed 1/min : 1295...1325  
 C-rod trav.mm : 4.00

5th speed 1/min : 1240...1255  
C-rod trav.mm : 7.40

LOWEST RATED SPEED I  
Control-lever  
position degrees: -

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 350  
C-rod trav.mm : 7.10...7.30  
C-rod trav.mm : 2.00  
Speed 1/min : 455...515

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1200  
C-rod trav.mm : 8.40...8.50  
2nd speed 1/min : 600  
C-rod trav.mm : 9.60...9.70  
3rd speed 1/min : 850  
C-rod trav.mm : 9.30...9.50  
4th speed 1/min : 1000  
C-rod trav.mm : 8.70...9.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 42.0...44.0  
1000H.: (39.5...46.5)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 1 G 12  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 320  
 Injection pump  
 Pump designation : PES6A85D410RS2591  
 EP type number : 0 410 886 903  
 Governor  
 Governor design. : RSV325...1150A8C2020  
 Governor no. : 0 420 232 345

Customer-spec. information  
 Customer : KHD

Engine : BF6L913

1st version kW : 117.0  
 Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
 : (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 12.40...12.50

Del.quantity cm3/ : 8.5...8.6

100H.: (8.3...8.8)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 7.9...8.1

Del.quantity cm3/ : 0.9...1.5

100H.: (0.7...1.7)

Dispersion cm3/ : 0.2

100H.: (0.4)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 6.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Charge press. hPa : 700

Del.quantity cm3/ : 85.5...86.5

1000H.: (83.5...88.5)

Dispersion cm3/ : 3.00

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 55...63

Testing:

1st c-rod trav.mm : 11.40

Speed 1/min : 1240...1250

2nd c-rod trav.mm : 4.00

Speed 1/min : 1295...1325

3rd c-rod trav.mm : 1350...1380

Speed 1/min : 4.00

4th speed 1/min : 1515

C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever

position degrees: 18...26

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 7.5

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 325

C-rod trav.mm : 7.90...8.10

C-rod trav.mm : 2.00

Speed 1/min : 640...700

#### TORQUE CONTROL

Dimension a mm : 1.10

Torque-control curve - 1st version

1st speed 1/min : 1200

C-rod trav.mm : 12.40...12.50

2nd speed 1/min : 500

C-rod trav.mm : 13.50...13.60

3rd speed 1/min : 925

C-rod trav.mm : 12.90...13.10

compensator (LDA,ADA,ALDA)

#### 1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 13.50...13.60

#### Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 12.10...12.20

2nd pressure hPa : 280

C-rod trav.mm : 13.20...13.30

3rd pressure hPa : 105

C-rod trav.mm : 12.50...12.70

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 65.0...67.0

1000H.: (63.0...69.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : LIE 8,4 A  
 Edition : 12.09.86  
 Superseded : 4.86  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 322  
 Injection pump  
 Pump designation : PES6A95D410RS2689  
 EP type number : 0 410 896 916  
 Governor  
 Governor design. : RSV400...1000A1G2187  
 L  
 Governor no. : 0 420 232 387

Customer-spec. information  
 Customer : LIEBHERR

Engine : D906 NA

1st version kW : 112.0  
 Speed 1/min: 2000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 40...45

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80  
 : (2.65...2.85)

H07

Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - : 0.50 (0.75)

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 Difference ° CS : 4.00...5.00

## BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 9.70...9.80

Del.quantity cm3/ : 8.1...8.3  
 100H.: (7.9...8.5)

Dispersion cm3/ : 0.3  
 100H.: (0.6)

2nd speed 1/min: 400.0  
 Contr.-rod trav. m: 6.4...6.6  
 Del.quantity cm3/ : 1.0...1.6  
 100H.: (0.7...1.8)  
 Dispersion cm3/ : 0.3  
 100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
 Degree: 3  
 Speed 1/min: 800  
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
 Notch setting x : 2.50

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1000  
 Del.quantity cm3/ : 81.0...83.0  
 1000H.: (79.0...85.0)  
 Dispersion cm3/ : 3.50  
 1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 46...54

Testing:  
 1st c-rod trav.mm : 8.70  
 Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00  
Speed 1/min : 1045...1075  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1065...1095  
4th speed 1/min : 1230  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 19...27  
Setting point w/out aux. spring  
Speed 1/min : 400  
Contr.-rod trav.mm: 6.0

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 400  
C-rod trav.mm : 6.40...6.60  
C-rod trav.mm : 2.00  
Speed 1/min : 470...530

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1000  
C-rod trav.mm : 9.70...9.80  
2nd speed 1/min : 550  
C-rod trav.mm : 9.70...9.90  
5th speed 1/min : 430  
C-rod trav.mm : 10.90...11.50

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 70.0...73.0  
1000H.: (67.5...75.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 0 3  
 Edition : 12.09.86  
 Superceeded : 10.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 327  
 Injection pump  
 Pump designation : PES6A95D32ORS2693  
 EP type number : 0 410 896 914  
 Governor  
 Governor design. : RSV300...1300AOC2195  
 R  
 Governor no. : 0 420 233 200

Customer-spec. information  
 Customer : DAF

Engine : DNT 620

1st version kW : 130.0  
 Speed 1/min: 2600

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant/delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 & c-rod trav max. : 21.0  
 Difference ° CS : 2.50...3.50

## BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 11.50...11.60

Del.quantity cm3/ : 7.6...7.7

100H.: (7.4...7.9)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.1...6.3

Del.quantity cm3/ : 0.7...1.1

100H.: (0.4...1.3)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 6.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 700

Del.quantity cm3/ : 76.5...77.5

1000H.: (74.5...79.5)

Dispersion cm3/ : 3.50

1000H.: (4.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 56...64

Testing:

1st c-rod trav.mm : 9.70  
Speed 1/min : 1340...1350  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1400...1430  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1430...1460  
4th speed 1/min : 1570  
C-rod trav.mm : 0.30...1.40

Remarks:

LOWEST RATED SPEED I

Control-lever  
position degrees: 25...33  
Setting point w/out aux. spring  
Speed 1/min : 300  
Contr.-rod trav.mm: 5.9  
Speed 1/min : 300  
C-rod trav.mm : 6.30...6.50  
C-rod trav.mm : 2.00  
Speed 1/min : 590...650

TORQUE CONTROL

Dimension a mm : 0.80  
Torque-control curve - 1st version  
1st speed 1/min : 1290  
C-rod trav.mm : 10.70...10.80  
2nd speed 1/min : 500  
C-rod trav.mm : 11.50...11.60  
4th speed 1/min : 1050  
C-rod trav.mm : 10.90...11.10

compensator (LDA,ADA,ALDA)

1st version

Setting  
Speed 1/min : 600  
Pressure hPa : 700  
Contr.-rod trav.mm: 11.50...11.60

Measurement

Speed 1/min : 600  
1st pressure hPa : -  
C-rod trav.mm : 11.20...11.40  
2nd pressure hPa : 250  
C-rod trav.mm : 11.40...11.50

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : 700  
Speed 1/min : 1290  
Del.quantity cm3/ : 72.0...74.0  
1000H.: (69.5...76.5)  
Charge press. hPa : -  
Speed 1/min : 600  
Del.quantity cm3/ : 65.5...66.5  
1000H.: (63.5...68.5)

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 C  
Edition : 12.09 86  
Superceeded : 10.35  
Calibrating oil : ISO 7013

Combination no. : 0 401 876 331

Injection pump  
Pump designation : PES6A90D410RS2710  
EP type number : 0 410 896 082  
Governor  
Governor design. : RSV300...1400A0C2006  
-2L  
Governor no. : 0 420 232 453

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 100.0  
Speed 1/min: 2800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

#### BASIC SETTING

1st speed 1/mi: 1380  
-----  
Contr.-rod trav.mm: 10.70...10.80  
-----  
Del.quantity cm3/ : 6.5...6.6  
100H.: (6.3...6.8)  
-----  
Dispersion cm3/ : 0.3  
100H.: (0.4)  
-----  
2nd speed 1/min: 300.0  
Contr.-rod trav. m: 8.0...8.2  
Del.quantity cm3/ : 0.6...1.0  
100H.: (0.4...1.2)  
Dispersion cm3/ : 0.2  
100H.: (0.4)

#### SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Contr.-rod travelmm: 0.30...1.00

Governor-spring reload  
Notch setting x : 4.50

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1380  
Del.quantity cm3/ : 65.0...66.0  
1000H.: (63.0...68.0)  
Dispersion cm3/ : 3.00  
1000H.: (4.50)

#### HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 57...65

#### Testing:

1st c-rod trav.mm : 9.70  
Speed 1/min : 1430...1440  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1490...1520  
4th speed 1/min : 1650  
C-rod trav.mm : 0.30...1.70

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 24...32  
Setting point w/out aux. spring  
Speed 1/min : 300  
Contr.-rod trav.mm: 8.1

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 300  
C-rod trav.mm : 8.00...8.20  
C-rod trav.mm : 2.00  
Speed 1/min : 420...480

#### SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1380  
C-rod trav.mm : 10.70...10.80  
2nd speed 1/min : 500  
C-rod trav.mm : 11.80...11.90  
3rd speed 1/min : 900  
C-rod trav.mm : 11.30...11.50

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500  
Del.quantity cm3/ : 53.0...55.0  
1000H.: (50.5...57.5)  
1000H.: (5.50)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 0 2  
Edition : 12.09.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 400 876 332  
  
Injection pump  
Pump designation : PES6A95D32ORS2693  
EP type number : 0 410 896 914  
Governor  
Governor design. : RSV300...1300A0C2206  
R  
Governor no. : 0 420 233 204

Customer-spec. information  
Customer : DAF

Engine : DNTD 620

1st version kW : 110.0  
Speed 1/min: 2600

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
: (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
8 c-rod tray max. : 21.0  
Difference ° CS : 2.50...3.50

## BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 10.80...10.90

Del.quantity cm3/ : 6.4...6.6

100H.: (6.2...6.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.3...6.5

Del.quantity cm3/ : 0.7...1.1

100H.: (0.4...1.3)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

No'ch setting x : 5.50

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Del.quantity cm3/ : 64.0...66.0

1000H.: (62.0...68.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 53...61

Testing:

1st c-rod trav.mm : 9.20  
Speed 1/min : 1340...1350  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1400...1430  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1430...1460  
4th speed 1/min : 1570  
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever  
position degrees: 25...33  
Setting point w/out aux. spring  
Speed 1/min : 300  
Contr.-rod trav.mm: 5.9

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 300  
C-rod trav.mm : 6.30...6.50  
C-rod trav.mm : 2.00  
Speed 1/min : 590...650

TORQUE CONTROL

Dimension a mm : 0.60  
Torque-control curve - 1st version  
1st speed 1/min : 1290  
C-rod trav.mm : 10.20...10.40  
2nd speed 1/min : 500  
C-rod trav.mm : 10.80...10.90  
4th speed 1/min : 1005  
C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1290  
Del.quantity cm3/ : 69.0...71.0  
1000H.: (66.5...73.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 0 1  
 Edition : 12.10.86  
 Superceeded : 4.86  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 333  
 Injection pump  
 Pump designation : PES6A95D32ORS2693Z  
 EP type number : 0 410 896 913  
 Governor  
 Governor design. : RSV300...1300AOC2195  
 R  
 Governor no. : 0 420 233 200

Customer-spec. information  
 Customer : DAF

Engine : DNS 620

1st version kW : 150.0  
 Speed 1/min: 2600

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10  
 : (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50  
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
 & c-rod tray max. : 21.0  
 Difference ° CS : 2.50...3.50

## BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 12.20...12.30

Del.quantity cm3/ : 8.7...8.9

100H.: (8.5...9.1)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.3...6.5

Del.quantity cm3/ : 0.7...1.1

100H.: (0.4...1.3)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 5.50

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 700

Del.quantity cm3/ : 87.0...89.0

1000H.: (85.0...91.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 54...62

Testing:  
1st c-rod trav.mm : 10.70  
Speed 1/min : 1340...1350  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1410...1440  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1430...1460  
4th speed 1/min : 1595  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 23...31  
Setting point w/out aux. spring  
Speed 1/min : 300  
Contr.-rod trav.mm: 5.9

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 300  
C-rod trav.mm : 6.30...6.50  
C-rod trav.mm : 2.00  
Speed 1/min : 570...630

#### TORQUE CONTROL

Dimension a mm : 0.60  
Torque-control curve - 1st version  
1st speed 1/min : 1290  
C-rod trav.mm : 11.70...11.90  
2nd speed 1/min : 500  
C-rod trav.mm : 12.20...12.30  
4th speed 1/min : 1020  
C-rod trav.mm : 11.90...12.10

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 600  
Pressure hPa : 700  
Contr.-rod trav.mm: 12.20...12.30

#### Measurement

Speed 1/min : 600  
1st pressure hPa : -  
C-rod trav.mm : 11.20...11.40  
2nd pressure hPa : 290  
C-rod trav.mm : 12.00...12.10  
3rd pressure hPa : 250  
C-rod trav.mm : 11.50...11.70

#### FUEL-DELIVERY CHARACTERISTICS

#### 1st version

Charge press. hPa : 700  
Speed 1/min : 1290

Del.quantity cm3/ : 86.0...88.0  
1000H.: (83.5...90.5)  
Charge press. hPa : -  
Speed 1/min : 600  
Del.quantity cm3/ : 65.0...67.0  
1000H.: (63.0...69.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 C 3  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 400 876 336  
 Injection pump  
 Pump designation : PES6A90D410RS2710  
 EP type number : 0 410 896 082  
 Governor  
 Governor design. : RSV350...1200A1C1154  
 -1L  
 Governor no. : 0 420 232 470

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 81.0  
 Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

START OF DELIVERY  
 Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35  
 : (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

#### BASIC SETTING

1st speed 1/mi: 1200  
-----  
Contr.-rod trav.mm: 9.80...9.90  
-----  
Del.quantity cm<sup>3</sup>/ : 5.1...5.2  
-----  
100H.: (4.9...5.4)  
-----  
Dispersion cm<sup>3</sup>/ : 0.3  
-----  
100H.: (0.4)  
-----  
2nd speed 1/min: 350.0  
Contr.-rod trav. m: 7.8...8.4  
Del.quantity cm<sup>3</sup>/ : 0.7...0.9  
100H.: (0.5...1.1)  
Dispersion cm<sup>3</sup>/ : 0.2  
100H.: (0.4)

#### SLEEVE POSITION

Governor-spring reload  
Notch setting x : 3.75

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1200  
Del.quantity cm<sup>3</sup>/ : 51.0...52.0  
1000H.: (49.0...54.0)  
Dispersion cm<sup>3</sup>/ : 3.00  
1000H.: (4.50)

#### HIGHEST RATED SPEED

1st version.  
Control-lever  
position degrees: 51...58

#### Testing:

1st c-rod trav.mm : 8.80  
Speed 1/min : 1240...1245  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1269...1282  
3rd c-rod trav.mm : 4.00  
Speed 1/min : 1310...1340  
4th speed 1/min : 1375  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 350  
C-rod trav.mm : 8.00...8.20  
C-rod trav.mm : 2.00  
Speed 1/min : 560...620

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1200  
C-rod trav.mm : 9.80...9.90  
2nd speed 1/min : 600  
C-rod trav.mm : 11.30...11.40  
3rd speed 1/min : 850  
C-rod trav.mm : 10.70...10.90  
4th speed 1/min : 975  
C-rod trav.mm : 10.20...10.50

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm<sup>3</sup>/ : 48.0...50.0  
1000H.: (45.5...52.5)  
Speed 1/min : 900  
Del.quantity cm<sup>3</sup>/ : 49.0...52.0  
1000H.: (46.5...54.5)

Remarks:  
APPLICATION

Unimog

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : HAN 10,8 F3  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 076 006  
  
Injection pump  
Pump designation : PE6A100D32ORS3030  
EP type number : 0 411 006 018  
Governor  
Governor design. : RSV350...1100A8C1119  
R  
Governor no. : 0 420 233 179

Customer-spec. information  
Customer : HANOMAG

Engine : D963A2

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42  
  
Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 003

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.80...1.90  
: (1.75...1.95)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50  
& c-rod tray max. : 21.0  
Difference ° CS : 5.50...6.50

## BASIC SETTING

1st speed 1/mi: 1100  
Contr.-rod trav.mm: 11.50...11.60

Del.quantity cm3/ : 15.0...15.2  
100H.: (14.8...15.4)

Dispersion cm3/ : 0.3  
100H.: (0.6)

2nd speed 1/min: 350.0  
Contr.-rod trav. m: 6.8...7.0  
Del.quantity cm3/ : 1.8...2.4  
100H.: (1.6...2.7)  
Dispersion cm3/ : 0.3  
100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
Degree: -3  
Speed 1/min: 800  
Cont.-rod travelmm: 0.30...0.70

Governor-spring reload  
Notch setting x : 5.50

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1100  
Del.quantity cm3/ : 150.0...152.0  
1000H.: (148.0...154.0)  
Dispersion cm3/ : 3.00  
1000H.: (6.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 52...60

Testing:  
1st c-rod trav.mm : 10.50  
Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00  
Speed 1/min : 1190...1220  
4th speed 1/min : 1355  
C-rod trav.mm : 0.30...1.40

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 20...28  
Setting point w/out aux. spring  
Speed 1/min : 350  
Contr.-rod trav.mm: 5.5

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 19.50  
Speed 1/min : 350  
C-rod trav.mm : 5.90...6.10  
C-rod trav.mm : 2.00  
Speed 1/min : 435...495  
Speed 1/min : 550  
C-rod trav.mm max : 1.00

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1100  
C-rod trav.mm : 11.50...11.60  
2nd speed 1/min : 550  
C-rod trav.mm : 11.50...11.70  
3rd speed 1/min : 400  
C-rod trav.mm : 12.70...13.30

#### Remarks:

Cold-start testing of RSV governor  
according to VDT-I-420/114.



**BOSCH INJ. PUMP TEST SPECIFICATIONS**

Note inst. in remarks column

Test sheet : RAB 10.8 B  
Edition : 12.09.86  
Superceeded : 6.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 246 013  
  
Injection pump  
Pump designation : PES6A100D410RS3039  
EP type number : 0 411 206 018  
Governor  
Governor design. : RQ200/1100AB1215L  
Governor no. : 0 420 200 102

Customer-spec. information  
Customer : RABA

Engine : D2156 MTKLL 6

1st version kW : 206.0  
Speed 1/min: 2200

**TEST BENCH REQUIREMENTS**

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter  
x Wall thickness  
x Length mm : 6.00X2.00X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

**START OF DELIVERY**

Test pressure, bar: 25...27

Prestroke mm : 1.60...1.70  
: (1.55...1.75)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

**BASIC SETTING**

1st speed 1/mi: 1100

Contr.-rod trav.mm: 13.40...13.50

Del.quantity cm3/ : 15.0...15.2

100H.: (14.8...15.4)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 200.0

Contr.-rod trav. m: 6.7...6.9

Del.quantity cm3/ : 1.0...1.6

100H.: (0.7...1.8)

Dispersion cm3/ : 0.3

100H.: (0.5)

**SLEEVE POSITION**

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

**FULL-LOAD DELIV. AT FULL-LOAD STOP**

1st version

Speed 1/min: 1100

Charge press. hPa : 700

Del.quantity cm3/ : 150.0...152.0

1000H.: (148.0...154.0)

Dispersion cm3/ : 3.00

1000H.: (6.00)

**HIGHEST RATED SPEED**

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 12.50

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1205...1235

**LOWEST RATED SPEED I**

Setting point w/out aux. spring

Speed 1/min : 200  
Contr.-rod trav.mm: 6.8

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.20  
Speed 1/min : 200  
C-rod trav.mm : 6.70...6.90  
C-rod trav.mm : 2.00  
Speed 1/min : 325...365

TORQUE CONTROL

Dimension a mm : 0.55  
Torque-control curve - 1st version  
1st speed 1/min : 1100  
C-rod trav.mm : 13.50...13.60  
2nd speed 1/min : 600  
C-rod trav.mm : 14.70...14.80  
3rd speed 1/min : 880  
C-rod trav.mm : 14.40...14.60  
4th speed 1/min : 945  
C-rod trav.mm : 13.80...14.10

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500  
Pressure hPa : 700  
Contr.-rod trav.mm: 14.60...14.80

Measurement

Speed 1/min : 500  
1st pressure hPa : -  
C-rod trav.mm : 11.50...11.60  
2nd pressure hPa : 450  
C-rod trav.mm : 13.70...13.80  
3rd pressure hPa : 325  
C-rod trav.mm : 12.10...12.30

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700  
Speed 1/min : 750  
Del.quantity cm3/ : 163.0...166.0  
1000H.: (160.5...168.5)  
Charge press. hPa : -  
Speed 1/min : 500  
Del.quantity cm3/ : 107.5...110.5  
1000H.: (105.5...112.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

- 4- 11- 10- 2- 6- 7

Note inst. in remarks column

Test sheet : MB 19,1 M  
Edition : 12.09.86  
Superceeded : 3.81  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 840 071  
  
Injection pump  
Pump designation : PE12P110A320LS832  
EP type number : 0 411 810 031  
Governor  
Governor design. : RQV350...1150PA510  
Governor no. : 0 421 813 251

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 404 A

1st version kW : 405.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Prestroke mm : 3.20...3.30  
                  : (3.15...3.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3

SD ang. spacing°CS: 0-45-60-105-120-165-  
180-225-240-285-300-  
345  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1130  
Contr.-rod trav.mm: 13.40...13.50

Del.quantity cm3/ : 15.0...15.2  
100H.: (14.7...15.4)

Dispersion cm3/ : 0.4  
100H.: (0.7)

2nd speed 1/min: 350.0  
Contr.-rod trav. m: 7.0...7.2  
Del.quantity cm3/ : 1.4...2.0  
100H.: (1.1...2.2)  
Dispersion cm3/ : 0.4

## SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 1150  
Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1130  
Charge press. hPa : 700  
Del.quantity cm3/ : 150.0...152.0  
1000H.: (147.5...154.5)  
Dispersion cm3/ : 4.00  
1000H.: (7.50)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 60...70

Testing:  
1st c-rod trav.mm : 12.40  
Speed 1/min : 1185...1195  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1295...1325  
4th speed 1/min : 1450  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever  
position degrees: 16...24

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.60  
Speed 1/min : 350  
C-rod trav.mm : 7.00...7.20  
C-rod trav.mm : 2.00  
Speed 1/min : 610...670

compensator (LDA,ADA,ALDA)

1st version

Setting  
Speed 1/min : 500  
Pressure hPa : 700  
Contr.-rod trav.mm: 13.40...13.50

Measurement

Speed 1/min : 500  
1st pressure hPa : -  
C-rod trav.mm : 12.30...12.40  
2nd pressure hPa : 350  
C-rod trav.mm : 13.10...13.20  
3rd pressure hPa : 250  
C-rod trav.mm : 12.60...12.80

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -  
Speed 1/min : 450  
Del.quantity cm3/ : 114.0...118.0  
1000H.: (111.0...121.0)  
Dispersion cm3/ : 6.00  
1000H.: (9.00)

Remarks:

APPLICATION

Ship

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 19,1 N 1  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 100  
Injection pump  
Pump designation : PE12P110A32OLS854  
EP type number : 0 411 810 044  
Governor  
Governor design. : RQ115OPA31OR  
Governor no. : 0 421 801 071

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM404A

1st version kW : 386.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Prestroke mm : 3.20...3.30  
: (3.15...3.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3

H26

- 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-135-  
180-225-240-285-300-  
345  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1100  
Contr.-rod trav.mm: 12.90...13.00  
Del.quantity cm3/ : 14.0...14.2  
100H.: (13.7...14.4)  
Dispersion cm3/ : 0.4  
100H.: (0.7)

2nd speed 1/min: 300.0  
Contr.-rod trav. m: 7.4...7.6  
Del.quantity cm3/ : 1.4...2.0  
100H.: (1.1...2.2)  
Dispersion cm3/ : 0.4  
100H.: (-)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 1080  
Sleeve travel mm: 2.20...2.40  
2nd speed 1/min: 1160  
Sleeve travel mm: 5.70...5.90  
3rd speed 1/min: 1240  
Sleeve travel mm: 8.50...8.70

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1100  
Del.quantity cm3/ : 140.0...148.0  
1000H.: (137.5...144.5)  
Dispersion cm3/ : 4.00  
1000H.: (7.50)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 27...35

Testing:  
1st c-rod trav.mm : 11.90  
Speed 1/min : 1160...1165

2nd c-rod trav.mm : 5.90  
Speed 1/min : 1205...1215  
4th speed 1/min : 1300  
C-rod trav.mm : 0.00...1.00

Remarks:  
APPLICATION

Generator set

# BOSCH INJ. PUMP TEST SPECIFICATIONS

- 4- 11- 10- 2- 6- 7

Note inst. in remarks column

Test sheet : MB 19.1 N 2  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 101  
Injection pump  
Pump designation : PE12P110A320LS854  
EP type number : 0 411 810 044  
Governor  
Governor design. : RQ1050PA374R  
Governor no. : 0 421 801 094

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM404A

1st version kW : 336.0  
Speed 1/min: 2100

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Prestroke mm : 3.20...3.30  
                  : (3.15...3.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3

SD ang. spacing°CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-  
                                  345  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1000  
Contr.-rod trav.mm: 12.90...13.00  
Del.quantity cm3/ : 14.0...14.2  
                                  100H.: (13.7...14.4)  
Dispersion cm3/ : 0.4  
                                  100H.: (0.7)

2nd speed 1/min: 300.0  
Contr.-rod trav. m: 7.3...7.5  
Del.quantity cm3/ : 1.4...2.0  
                                  100H.: (1.1...2.2)  
Dispersion cm3/ : 0.4  
                                  100H.: (-)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 1000  
Sleeve travel mm: 2.00...2.20  
2nd speed 1/min: 1050  
Sleeve travel mm: 4.10...4.30  
3rd speed 1/min: 1100  
Sleeve travel mm: 5.00...5.20  
4th speed 1/min: 1150  
Sleeve travel mm: 9.40...9.60

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1000  
Del.quantity cm3/ : 140.0...142.0  
                                  1000H.: (137.5...144.5)  
Dispersion cm3/ : 4.00  
                                  1000H.: (7.50)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 22...30

Testing:

1st c-rod trav.mm : 11.90  
Speed 1/min : 1055...1060  
2nd c-rod trav.mm : 6.00  
Speed 1/min : 1095...1105  
4th speed 1/min : 1200  
C-rod trav.mm : 0.00...1.0

Remarks:  
APPLICATION

Generator set



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 19,1 N  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 102  
Injection pump  
Pump designation : PE12P110A32OLS854  
EP type number : 0 411 810 044  
Governor  
Governor design. : RQ1050PA310  
Governor no. : 0 421 801 108

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM404A

1st version kW : 407.0  
Speed 1/min: 2100

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 0.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Prestroke mm : 3.20...3.30  
                  : (3.15...3.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-  
                                  345  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 13.70...13.80

Del.quantity cm3/ : 15.5...15.7

100H.: (15.2...15.9)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.3...7.5

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.4

100H.: (-)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 1010

Sleeve travel mm: 1.90...2.10

2nd speed 1/min: 1060

Sleeve travel mm: 4.50...4.70

3rd speed 1/min: 1110

Sleeve travel mm: 7.20...7.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 155.0...157.0

1000H.: (152.5...159.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

## HIGHEST RATED SPEED

Testing:

1st c-rod trav.mm : 12.70

Speed 1/min : 1055...1060  
2nd c-rod trav.mm : 5.90  
Speed 1/min : 1095...1105  
4th speed 1/min : 1200  
C-rod trav.mm : 0.00...1.00

## APPLICATION

Generator set

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 19,1 N 4  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 103  
Injection pump  
Pump designation : PE12P110A32OLS854-1  
EP type number : 0 411 810 045  
Governor  
Governor design. : RQ750PA374R  
Governor no. : 0 421 801 074

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM404A

1st version kW : 312.0  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30  
: (3.15...3.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
: - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
180-225-240-285-300-

SD ang. spacing°CS: 345  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 14.00...14.10

Del.quantity cm3/ : 15.6...15.8

100H.: (15.3...16.1)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.7...7.9

Del.quantity cm3/ : 1.3...1.8

100H.: (1.0...2.0)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 720

Sleeve travel mm: 1.90...2.10

2nd speed 1/min: 760

Sleeve travel mm: 4.20...4.40

3rd speed 1/min: 800

Sleeve travel mm: 7.90...8.10

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 156.0...158.0

1000H.: (153.0...161.0)

Dispersion cm3/ : 4.00

1000H.: (8.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 24...32

Testing:

1st c-rod trav.mm : 13.00  
Speed 1/min : 750...755  
2nd c-rod trav.mm : 5.40  
Speed 1/min : 785...795  
4th speed 1/min : 850  
C-rod trav.mm : 0.00...1.0

Remarks:

APPLICATION

Generator set

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 19,1 N 3  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 840 104  
  
Injection pump  
Pump designation : PE12P110A32OLS854-1  
EP type number : 0 411 810 045  
Governor  
Governor design. : RQ900PA31OR  
Governor no. : 0 421 801 059

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM404A

1st version kW : 368.0  
Speed 1/min: 1800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Prestroke mm : 3.20...3.30  
                  : (3.15...3.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-  
                                  345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 14.10...14.20

Del.quantity cm3/ : 15.9...16.1

100H.: (15.6...16.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.6...7.8

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.4

100H.: (-)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 840

Sleeve travel mm: 2.10...2.30

2nd speed 1/min: 900

Sleeve travel mm: 5.20...5.40

3rd speed 1/min: 960

Sleeve travel mm: 9.20...9.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Del.quantity cm3/ : 159.0...161.0

1000H.: (156.5...163.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

## HIGHEST RATED SPEED

Testing:

1st c-rod trav.mm : 13.10

Speed 1/min : 905...910  
2nd c-rod trav.mm : 5.90  
Speed 1/min : 940...950  
4th speed 1/min : 1050  
C-rod trav.mm : 0.00...1.00

## APPLICATION

Generator set

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 19,1 0  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 840 105  
  
Injection pump  
Pump designation : PE12P110A320LS855  
EP type number : 0 411 810 046  
Governor  
Governor design. : RQV350...1150PA476R  
Governor no. : 0 421 813 227

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 404 A

1st version kW : 368.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

START OF DELIVERY  
Test pressure, bar: 25...27

J08

Prestroke mm : 3.20...3.30  
                  : (3.15...3.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-

SD ang. spacing°CS: 345  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1130

Contr.-rod trav.mm: 12.80...12.90

Del.quantity cm3/ : 13.4...13.6

100H.: (13.1...13.8)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.4...7.6

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.4

100H.: (0.7)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1130

Charge press. hPa : 700

Del.quantity cm3/ : 134.0...136.0

1000H.: (131.5...138.5)

Dispersion cm3/ : 4.00

1000H.: (8.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

Testing:

1st c-rod trav.mm : 11.80

Speed 1/min : 1185...1195

2nd c-rod trav.mm : 4.00  
Speed 1/min : 1295...1325  
4th speed 1/min : 1450  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 14...22

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 9.00  
Speed 1/min : 350  
C-rod trav.mm : 7.30...7.50  
C-rod trav.mm : 2.00  
Speed 1/min : 615...675

#### TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1130  
C-rod trav.mm : 12.80...12.90  
2nd speed 1/min : 700  
C-rod trav.mm : 13.10...13.20  
3rd speed 1/min : 970  
C-rod trav.mm : 13.00...13.10  
4th speed 1/min : 1070  
C-rod trav.mm : 12.80...12.90

compensator (LDA,ADA,ALDA)

#### 1st version

##### Setting

Speed 1/min : 500  
Pressure hPa : 700  
Contr.-rod trav.mm: 13.10...13.20

##### Measurement

Speed 1/min : 500

1st pressure hPa : -  
C-rod trav.mm : 12.40...12.50  
2nd pressure hPa : 385  
C-rod trav.mm : 12.90...13.00  
3rd pressure hPa : 310  
C-rod trav.mm : 12.50...12.70

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

##### 1st version

Charge press. hPa : 700  
Speed 1/min : 700  
Del.quantity cm3/ : 135.0...139.0  
1000H.: (132.0...142.0)  
Dispersion cm3/ : 6.00  
1000H.: (9.00)  
Charge press. hPa : -

Speed 1/min : 500  
Del.quantity cm3/ : 121.0...123.0  
1000H.: (118.5...125.5)  
Dispersion cm3/ : 6.00  
1000H.: (9.00)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 19,1 0 1  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 106  
Injection pump  
Pump designation : PE12P110A320LS855  
EP type number : 0 411 810 046  
Governor  
Governor design. : RQV350...1150PA493R  
Governor no. : 0 421 813 237

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 404 A

1st version kW : 386.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values \_\_\_\_\_

START OF DELIVERY  
Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30  
                  : (3.15...3.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing<sup>0</sup>CS: 0-45-60-105-120-165-  
                          180-225-240-285-300-  
SD ang. spacing<sup>0</sup>CS: 345  
Tolerance + - % : 0.50 (0.75)

SD mark cyl. no. : 12

#### BASIC SETTING

1st speed 1/mi: 1130

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm<sup>3</sup>/ : 14.0...14.2

100H.: (13.7...14.5)

Dispersion cm<sup>3</sup>/ : 0.4

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.5...7.7

Del.quantity cm<sup>3</sup>/ : 1.8...2.4

100H.: (1.5...2.6)

Dispersion cm<sup>3</sup>/ : 0.4

100H.: (0.7)

#### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1180

Contr.-rod travelmm: 15.20...17.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1130

Charge press. hPa : 700

Del.quantity cm<sup>3</sup>/ : 140.0...142.0

1000H.: (137.0...145.0)

Dispersion cm<sup>3</sup>/ : 4.00

1000H.: (8.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

#### Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 1185...1195

2nd c-rod trav.mm : 4.00  
Speed 1/min : 1295...1325  
4th speed 1/min : 1450  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 14...22

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.60

Speed 1/min : 350

C-rod trav.mm : 7.00...7.20

C-rod trav.mm : 2.00

Speed 1/min : 690...750

compensator (LDA,ADA,ALDA)

#### 1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 13.10...13.20

#### Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 12.30...12.40

2nd pressure hPa : 395

C-rod trav.mm : 12.90...13.00

3rd pressure hPa : 330

C-rod trav.mm : 12.50...12.70

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm<sup>3</sup>/ : 121.0...123.0

1000H.: (118.0...126.0)

Dispersion cm<sup>3</sup>/ : -

1000H.: (9.00)

Charge press. hPa : 700

Speed 1/min : 1130

Del.quantity cm<sup>3</sup>/ : 99.0...103.0

1000H.: (96.0...106.0)

Dispersion cm<sup>3</sup>/ : -

1000H.: (9.00)

#### Remarks:

\* = Set at reduced-delivery stop.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 19,1 0 2  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 840 107  
  
Injection pump  
Pump designation : PE12P110A32OLS855  
EP type number : 0 411 810 046  
Governor  
Governor design. : RQV350...1150PAS10  
Governor no. : 0 421 813 251

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 404 A

1st version kW : 405.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

START OF DELIVERY

Prestroke mm : 3.20...3.30  
                  : (3.15...3.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing<sup>o</sup>CS: 0-45-60-105-120-165-  
                          180-225-240-285-300-  
                          345

Tolerance + - <sup>o</sup> : 0.50 (0.75)

SD mark cyl. no. : 12

#### BASIC SETTING

1st speed 1/mi: 1130

Contr.-rod trav.mm: 13.40...13.50

Del.quantity cm3/ : 15.0...15.2

100H.: (14.7...15.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.0...7.2

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.4

100H.: (-)

#### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Contr.-rod travelmm: 15.20...17.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1130

Charge press. hPa : 700

Del.quantity cm3/ : 150.0...152.0

1000H.: (147.5...154.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...70

Testing:

1st c-rod trav.mm : 12.40

Speed 1/min : 1185...1195

2nd c-rod trav.mm : 4.00

Speed 1/min : 1295...1325

4th speed 1/min : 1450

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.60

Speed 1/min : 350

C-rod trav.mm : 7.00...7.20

C-rod trav.mm : 2.00

Speed 1/min : 610...670

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 13.40...13.50

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 12.30...12.40

2nd pressure hPa : 350

C-rod trav.mm : 13.10...13.20

3rd pressure hPa : 250

C-rod trav.mm : 12.60...12.80

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -

Speed 1/min : 450

Del.quantity cm3/ : 114.0...118.0

1000H.: (111.0...121.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

#### APPLICATION

Ship

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 19,0 E  
Edition : 12.09.86  
Superceeded : 1.83  
Calibrating oil : ISO-4113

Combination no. : 0 401 840 700

Injection pump  
Pump designation : PE12P110A920LS3060  
EP type number : 0 411 810 700  
Governor  
Governor design. : RQV300...1250PA479KR  
Governor no. : 0 421 815 159

Customer-spec. information  
Customer : KHD

Engine : BF12L413FC

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90  
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 4- 9- 8- 5- 2-  
11- 10- 3- 6- 7- 12

SD ang. spacing<sup>0</sup>CS: 0-15-60-75-120-135-1  
80-195-240-255-300-3  
15  
Tolerance + - <sup>0</sup> : 0.50 (0.75)  
SD mark cyl. no. : 1

#### BASIC SETTING

1st speed 1/mi: 1250  
-----  
Contr.-rod trav.mm: 11.70...11.80  
-----  
Del.quantity cm3/ : 14.4...14.7  
-----  
100H.: (14.2...15.0)  
-----  
Dispersion cm3/ : 0.4  
-----  
100H.: (0.7)  
-----  
2nd speed 1/min: 300.0  
Contr.-rod trav. m: 6.6...6.8  
Del.quantity cm3/ : 1.4...1.9  
100H.: (1.1...2.1)  
Dispersion cm3/ : 0.7  
100H.: (1.0)

#### SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 1270  
Contr.-rod travelmm: 15.20...17.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1250  
Charge press. hPa : 750  
Del.quantity cm3/ : 144.5...147.5  
1000H.: (142.0...150.0)  
Dispersion cm3/ : 4.00  
1000H.: (7.50)

#### HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 56...64

Testing:  
1st c-rod trav.mm : 10.70  
Speed 1/min : 1290...1300  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1395...1425  
4th speed 1/min : 1550  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 9...17

Testing:  
Speed 1/min : 100  
C-rod trav.mm min : 8.10  
Speed 1/min : 300  
C-rod trav.mm : 6.60...6.80

#### CONSTANT REGULATION

Speed 1/min : 350...500

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1250  
C-rod trav.mm : 11.70...11.80  
2nd speed 1/min : 850  
C-rod trav.mm : 11.00...11.10  
3rd speed 1/min : 500  
C-rod trav.mm : 10.10...10.30

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 500  
Pressure hPa : 750  
Contr.-rod trav.mm: 10.40...10.50

#### Measurement

Speed 1/min : 500  
1st pressure hPa : -  
C-rod trav.mm : 9.10...9.30  
2nd pressure hPa : 350  
C-rod trav.mm : 10.10...10.30  
3rd pressure hPa : 220  
C-rod trav.mm : 9.60...9.80

#### SWITCH-OVER POINT

Speed 1/min : 280 (295)

#### FUEL-DELIVERY CHARACTERISTICS

1st version  
Charge press. hPa : 750  
Speed 1/min : 850  
Del.quantity cm3/ : 120.0...124.0  
1000H.: (117.0...127.0)  
Charge press. hPa : -  
Speed 1/min : 500  
Del.quantity cm3/ : 80.5...83.5  
1000H.: (78.0...86.0)

Remarks:  
APPLICATION

Special-purpose vehicle





Dispersion cm3/ : 5.00  
1000H.: (8.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 65...73

#### Testing:

1st c-rod trav.mm : 10.10  
Speed 1/min : 1190...1200  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1280...1310  
4th speed 1/min : 1375  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.50  
Speed 1/min : 350  
C-rod trav.mm : 6.90...7.10

#### CONSTANT REGULATION

Speed 1/min : 400...600

compensator (LDA,ADA,ALDA)

1st version

#### Setting

Speed 1/min : 500  
Pressure hPa : -  
Contr.-rod trav.mm: 9.80...10.00

#### Measurement

Speed 1/min : 500  
1st pressure hPa : 320  
C-rod trav.mm : 9.90...10.10  
2nd pressure hPa : 380  
C-rod trav.mm : 10.50...10.80

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 600  
Speed 1/min : 650  
Del.quantity cm3/ : 160.0...166.0  
1000H.: (157.0...169.0)  
Dispersion cm3/ : 12.0  
1000H.: (12.0)  
Charge press. hPa : -  
Speed 1/min : 1150  
Del.quantity cm3/ : 118.0...121.0  
1000H.: (115.0...124.0)

Dispersion cm3/ : 8.00  
1000H.: (12.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 127.0...129.0  
1000H.: (124.0...132.0)

Dispersion cm3/ : 8.00  
1000H.: (-)

#### Remarks:

\* = Set at reduced-delivery stop.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 20,9 V  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 729  
Injection pump  
Pump designation : PE12P120A520/4LS3832  
EP type number : 0 411 820 715  
Governor  
Governor design. : RQ750PA663-7  
Governor no. : 0 421 801 331

Customer-spec. information  
Customer : MAN

Engine : D2842LE

1st version kW : 380.0  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30  
: (4.15...4.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
- 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
180-225-240-285-300-

SD ang. spacing°CS: 345  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 21.5...21.7

100H.: (21.2...22.0)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/ : 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm3/ : 0.8

100H.: (1.2)

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 215.0...217.0

1000H.: (212.0...220.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

## HIGHEST RATED SPEED

Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min : 797...810

4th speed 1/min : 950.0

C-rod trav.mm : 0.00...1.00

Remarks:

: MAN-NR. 2-7673

APPLICATION

Generator set

# BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note inst. in remarks column

Test sheet : KHD 19,2 B  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 733  
Injection pump  
Pump designation : PE12P110A920LS3173  
EP type number : 0 411 810 708  
Governor  
Governor design. : RQ300/1200PA803  
Governor no. : 0 421 801 350

Customer-spec. information  
Customer : KHD

Engine : BF12L513C

1st version kW : 386.0  
Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Prestroke mm : 2.80...2.90  
: (2.75...2.95)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 4- 9- 8- 5- 2-

SD ang. spacing°CS: 0-15-60-75-120-135-1  
80-195-240-255-300-3  
15  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 1200  
-----  
Contr.-rod trav.mm: 12.70...12.80  
-----  
Del.quantity cm3/ : 16.7...16.9  
-----  
100H.: (16.4...17.2)  
-----  
Dispersion cm3/ : 0.5  
-----  
100H.: (0.8)  
-----

2nd speed 1/min: 300.0  
Contr.-rod trav. m: 6.5...6.7  
Del.quantity cm3/ : 1.5...2.1  
Dispersion cm3/ : 0.7  
100H.: (1.0)

## SLEEVE POSITION

Control-lever position  
Degree: 45...47  
Speed 1/min: 600  
Contr.-rod travelmm: 19.20...20.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1200  
Del.quantity cm3/ : 167.0...169.0  
1000H.: (164.0...172.0)  
Dispersion cm3/ : 5.00  
1000H.: (8.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 29...37

Setting point:  
Speed 1/min : 600  
Contr.-rod trav.mm: 20.0

Testing:  
1st c-rod trav.mm : 11.70  
Speed 1/min : 1245...1260  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1290...1320

4th speed 1/min : 1400  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.6

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.00

Speed 1/min : 300

C-rod trav.mm : 6.50...6.70

C-rod trav.mm : 2.00

Speed 1/min : 395...435

Remarks:

**BOSCH INJ. PUMP TEST SPECIFICATIONS**

Note inst. in remarks column

Test sheet : MAN 20.9 W  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 735  
Injection pump  
Pump designation : PE12P120A520/4LS3828  
EP type number : 0 411 820 714  
Governor  
Governor design. : RQ1200PA664-2  
Governor no. : 0 421 801 355

Customer-spec. information  
Customer : MAN

Engine : D2842LE

1st version kW : 560.0  
Speed 1/min: 2400

**TEST BENCH REQUIREMENTS**Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 1 688 901 019Opening  
pressure, bar : 207...210Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 075

Outside diameter  
x Wall thickness  
x Length mm : 8.00X2.50X1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

**START OF DELIVERY**

Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30  
                  : (4.15...4.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
180-225-240-285-300-SD ang. spacing°CS: 345  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

**BASIC SETTING**

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 20.0...20.2

100H.: (19.7...20.5)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.7...2.3  
100H.: (1.4...2.6)Dispersion cm3/ : 0.8  
100H.: (1.2)**FULL-LOAD DELIV. AT FULL-LOAD STOP**

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 200.0...202.0  
1000H.: (197.0...205.0)Dispersion cm3/ : 5.00  
1000H.: (9.00)**HIGHEST RATED SPEED**

Testing:

1st c-rod trav.mm : 10.90

Speed 1/min : 1225...1240

2nd c-rod trav.mm : 4.00

Speed 1/min : 1285...1315

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

Remarks:

: MAN-NR. 2-7686

APPLICATION

Generator set





C-rod trav.mm : 0.00...1.00

APPLICATION

Generator

## Note inst. in remarks column

C-rod trav.mm : 0.00...1.00

APPLICATION

Generator

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 I 1  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 401 840 738  
 Injection pump  
 Pump designation : PE12P120A320LS3836  
 EP type number : 0 411 820 717  
 Governor  
 Governor design. : RQ750PA635-2  
 Governor no. : 0 421 801 270

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 424 LA

1st version kW : 354.0  
 Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
 quantity min. 1/h: 150...170

Calibrating nozzle-holder  
 assembly : 0 688 901 019

Opening  
 pressure, bar : 207...210

Perforated-plate  
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
 : (3.95...4.15)  
 Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 12- 1- 5- 9- 8- 3-  
 - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
 180-225-240-285-300-  
 345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.40...12.50

Del.quantity cm3/ : 20.2...20.4

100H.: (19.9...20.7)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 4.9...5.1

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 202.0...204.0

1000H.: (199.0...207.0)

Dispersion cm3/ : 5.00

1000H.: (8.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 27...35

Testing:

1st c-rod trav.mm : 11.40

Speed 1/min: 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min: 778...791

4th speed 1/min: 840

C-rod trav.mm : 0.00...1.50

APPLICATION

Generator

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 H 1  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 840 739  
  
Injection pump  
Pump designation : PE12P120A320LS3836  
EP type number : 0 411 820 717  
Governor  
Governor design. : RQ1050PA634-1  
Governor no. : 0 421 801 242

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 424 A

1st version kW : 385.0  
Speed 1/min: 2100

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-  
                                  345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 18.1...18.3

100H.: (17.8...18.6)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.5...5.7

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 181.0...183.0

1000H.: (178.0...186.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: -

Testing:

1st c-rod trav.mm : 10.90

Speed 1/min: 1050...1055

2nd c-rod trav.mm : 4.00

Speed 1/min: 1090...1110

Remarks:  
APPLICATION

Generator

## BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet	: MB 21,9 I 2
Edition	: 12.09.86
Superceeded	: -
Calibrating oil	: ISO-4113
Combination no.	: 0 401 840 740
Injection pump	
Pump designation	: PE12P120A320LS3836-1
EP type number	: 0 411 820 718
Governor	
Governor design.	: RQV350...1150PA493-2
Governer no.	: 0 421 813 367

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 424 A

1st version kW : 390.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

**Inlet press., bar : 1.50**

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values

START OF DELIVERY  
Test pressure, bar: 25...27

```

Prestroke mm      : 4.00...4.10
                  : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence      : 12- 1- 5-  9-  8-  3-
                  : - 4- 11- 10- 2- 6- 7-

```

SD ang. spacing<sup>0</sup>CS: 0-45-60-105-120-165-  
180-225-240-285-300-  
SD ang. spacing<sup>0</sup>CS: 345  
Tolerance + - <sup>0</sup>: 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed      1/mi: 1150

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 15.9...16.1  
-----  
100H.: (15.6...16.4)

Dispersion cm3/ : 0.5  
100H.: (0.8)

```

2nd speed      1/min: 350.0
Contr.-rod trav. m: 4.8...5.0
Del.quantity   cm3/ : 1.4...2.0
                100H.: (1.1...2.3)
Dispersion     cm3/ : 0.8
                100H.: (1.2)

```

(B) Setting of injection pump with externally-mounted governor

## SLEEVE TRAVELS

1st speed	1/min:	350
Sleeve travel	mm:	1.90...2.30
2nd speed	1/min:	500
Sleeve travel	mm:	3.20...3.60
3rd speed	1/min:	12000
Sleeve travel	mm:	8.30...8.70
4th speed	1/min:	1275
Sleeve travel	mm:	9.30...9.70

## SLEEVE POSITION

Speed 1/min: 1200  
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

```
1st version
Speed      1/min: 1150
Charge press. hPa : 600
Del.quantity cm3/ : 159.0...161.0
1000H.: (156.0...164.0)
```



Dispersion cm3/ : 5.00  
1000H.: (8.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 65...73

#### Testing:

1st c-rod trav.mm : 10.10

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1280...1310

4th speed 1/min : 1375

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.50

Speed 1/min : 350

C-rod trav.mm : 6.90...7.10

#### CONSTANT REGULATION

Speed 1/min : 400...600

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 600

Contr.-rod trav.mm: 11.10...11.20

#### Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.00...10.20

2nd pressure hPa : 380

C-rod trav.mm : 10.80...10.90

3rd pressure hPa : 320

C-rod trav.mm : 10.10...10.30

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 600

Speed 1/min : 650

Del.quantity cm3/ : 160.0...166.0

1000H.: (157.0...169.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 127.0...129.0  
1000H.: (124.0...132.0)

Charge press. hPa : -

Speed 1/min : 1150

Del.quantity cm3/ : 118.0...121.0

1000H.: (115.0...124.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 I 3  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113

Combination no. : 0 401 840 741

Injection pump  
Pump designation : PE12P120A320LS3836-1  
EP type number : 0 411 820 718  
Governor  
Governor design. : RQ750PA635-1  
Governor no. : 0 421 801 235

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 424 LA

1st version kW : 327.0  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

# START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing<sup>0</sup>CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-  
                                  345  
Tolerance + - <sup>0</sup> : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 700  
-----  
Contr.-rod trav.mm: 11.80...11.90  
-----  
Del.quantity cm3/ : 19.0...19.2  
-----  
                  100H.: (18.7...19.5)  
-----  
Dispersion cm3/ : 0.5  
-----  
                  100H.: (0.8)  
-----

2nd speed 1/min: 300.0  
Contr.-rod trav. m: 4.8...5.0  
Del.quantity cm3/ : 1.4...2.0  
                  100H.: (1.1...2.3)  
Dispersion cm3/ : 0.8  
                  100H.: (1.2)

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 700  
Del.quantity cm3/ : 190.0...192.0  
                  1000H.: (187.0...195.0)  
Dispersion cm3/ : 5.00  
                  1000H.: (8.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 28...36

Testing:  
1st c-rod trav.mm : 10.90  
Speed 1/min : 750...755  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 780...790  
4th speed 1/min : 900

C-rod trav.mm : 0.00...1.00

## APPLICATION

Generator

## BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 K  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113

Combination no. : 0 401 840 742

Injection pump  
Pump designation : PE12P120A32OLS3836-1  
EP type number : 0 411 820 718  
Governor  
Governor design. : RQV350...1150PA493-3  
Governor no. : 0 421 813 422

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 424 LA

1st version kW : 452.0  
Speed 1/min: 2300

### TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

### START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-  
                                  345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

### BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 18.0...18.2

100H.: (17.7...18.5)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 4.8...5.0

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with  
externally-mounted governor

### SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 2.20...2.30

2nd speed 1/min: 510

Sleeve travel mm: 3.20...3.50

3rd speed 1/min: 1150

Sleeve travel mm: 7.50...8.80

4th speed 1/min: 1200

Sleeve travel mm: 8.90...9.10

### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1180

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1150  
Charge press. hPa : 700  
Del. quantity cm3/ : 180.0...182.0  
1000H.: (177.0...185.0)  
Dispersion cm3/ : 5.00  
1000H.: (9.00)

#### HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 61...69

#### Testing:

1st c-rod trav.mm : 11.10  
Speed 1/min : 1190...1200  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1235...1265  
4th speed 1/min : 1350  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 8...16

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 6.20  
Speed 1/min : 350  
C-rod trav.mm : 4.50...4.70

#### CONSTANT REGULATION

Speed 1/min : 400...600

compensator (LDA,ADA,ALDA)

#### 1st version

##### Setting

Speed 1/min : 500  
Pressure hPa : 700  
Contr.-rod trav.mm: 12.10...12.20

##### Measurement

Speed 1/min : 500

1st pressure hPa : -  
C-rod trav.mm : 10.10...10.30  
2nd pressure hPa : 540  
C-rod trav.mm : 11.40...11.50  
3rd pressure hPa : 470  
C-rod trav.mm : 10.60...10.80

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

##### 1st version

Charge press. hPa : 700

Speed 1/min : 650  
Del. quantity cm3/ : 179.0...185.0  
1000H.: (176.0...188.0)  
Dispersion cm3/ : 8.00  
1000H.: (12.0)  
Charge press. hPa : 700  
Speed 1/min : 1150  
Del. quantity cm3/ : 134.0...138.0  
1000H.: (131.0...141.0)  
Dispersion cm3/ : 8.00  
1000H.: (12.0)  
Charge press. hPa : -  
Speed 1/min : 500  
Del. quantity cm3/ : 131.0...133.0  
1000H.: (128.0...136.0)  
Dispersion cm3/ : 8.00  
1000H.: (12.0)

#### Remarks:

\* = Set at reduced-delivery stop.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 I 4  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 840 743  
  
Injection pump  
Pump designation : PE12P120A320LS3836-1  
EP type number : 0 411 820 718  
Governor  
Governor design. : RQ750PA635  
Governor no. : 0 421 801 166

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 424 A

1st version kW : 316.0  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-  
                                  345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 19.3...19.5

100H.: (19.0...19.8)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 4.9...5.1

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 193.0...195.0

1000H.: (190.0...198.0)

Dispersion cm3/ : 5.00

1000H.: (8.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 25...33

Testing:

1st c-rod trav.mm : 10.90

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min : 780...790

Remarks:  
APPLICATION

Generator

**BOSCH INJ. PUMP TEST SPECIFICATIONS**

Note inst. in remarks column

Test sheet : MB 21,9 K 1  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113

Combination no. : 0 401 840 744

Injection pump  
 Pump designation : PE12P120A32OLS3836-2  
 EP type number : 0 411 820 719  
 Governor  
 Governor design. : RQV350...1050PA493  
 Governor no. : 0 421 813 365

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 424 A

1st version kW : 357.0  
 Speed 1/min: 2100

**TEST BENCH REQUIREMENTS**

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve  
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
 quantity min. 1/h: 150...170

Calibrating nozzle-holder  
 assembly : 1 688 901 019

Opening  
 pressure, bar : 207...210

Perforated-plate  
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

**START OF DELIVERY**

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
 : (3.95...4.15)  
 Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 12- 1- 5- 9- 8- 3  
 : - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
 180-225-240-285-300-  
 345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

**BASIC SETTING**

1st speed 1/mi: 1050

Contr.-rod trav.mm: 10.20...10.30

Del.quantity cm3/ : 15.1...15.3

100H.: (14.8...15.6)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 4.6...4.8

Del.quantity cm3/ : 1.2...1.8

100H.: (0.9...2.1)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with  
 externally-mounted governor

**SLEEVE TRAVELS**

1st speed 1/min: 350

Sleeve travel mm: 1.90...2.30

2nd speed 1/min: 500

Sleeve travel mm: 3.20...3.60

3rd speed 1/min: 1200

Sleeve travel mm: 8.30...8.70

4th speed 1/min: 1275

Sleeve travel mm: 9.30...9.70

**SLEEVE POSITION**

Control-lever position

Degree: -1

Speed 1/min: 1200

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP



1st version  
Speed 1/min: 1050  
Charge press. hPa : 600  
Del.quantity cm3/ : 151.0...153.0  
1000H.: (148.0...156.0)  
Dispersion cm3/ : 5.00  
1000H.: (8.00)

#### HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 53...61

#### Testing:

1st c-rod trav.mm : 9.20  
Speed 1/min : 1085...1095  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1165...1195  
4th speed 1/min : 1350  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 8...16

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 6.20  
Speed 1/min : 350  
C-rod trav.mm : 4.60...4.80

#### CONSTANT REGULATION

Speed 1/min : 360...500  
compensator (LDA,ADA,ALDA)

#### 1st version

##### Setting

Speed 1/min : 500  
Pressure hPa : 600  
Contr.-rod trav.mm: 10.20...10.30

##### Measurement

Speed 1/min : 500

1st pressure hPa : -  
C-rod trav.mm : 9.50...9.60  
2nd pressure hPa : 280  
C-rod trav.mm : 9.90...10.00  
3rd pressure hPa : 240  
C-rod trav.mm : 9.60...9.80

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

#### 1st version

Charge press. hPa : -

Speed 1/min : 500  
Del.quantity cm3/ : 128.0...130.0  
1000H.: (125.0...133.0)  
Dispersion cm3/ : -  
1000H.: (12.0)  
Charge press. hPa : 600  
Speed 1/min : 1050  
Del.quantity cm3/ : 120.0...123.0  
1000H.: (117.0...126.0)  
Dispersion cm3/ : -  
1000H.: (12.0)

#### Remarks:

\* = Set at reduced-delivery stop.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 K 2  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 401 840 745  
 Injection pump  
 Pump designation : PE12P120A32OLS3836-3  
 EP type number : 0 411 820 720  
 Governor  
 Governor design. : RQV350...1150PA493-5  
 Governor no. : 0 421 813 520

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 424 A

1st version kW : 390.0  
 Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Inlet press., bar : 1.50

Overflow  
 quantity min. 1/h: 150...170

Calibrating nozzle-holder  
 assembly : 1 688 901 019

Opening  
 pressure, bar : 207...210

Perforated-plate  
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
 : (3.95...4.15)  
 Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 12- 1- 5- 9- 8- 3  
 : - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
 180-225-240-285-300-

SD ang. spacing°CS: 345  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 15.9...16.1

100H.: (15.6...16.4)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 4.8...5.0

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 350

Sleeve travel mm: 1.90...2.30

2nd speed 1/min: 500

Sleeve travel mm: 3.20...3.60

3rd speed 1/min: 1200

Sleeve travel mm: 8.30...8.70

4th speed 1/min: 1275

Sleeve travel mm: 9.30...9.70

## SLEEVE POSITION

Control-lever position

Degree: MAX.

Speed 1/min: 1200

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 600

Del.quantity cm3/ : 159.0...161.0  
1000H.: (156.0...164.0)  
Dispersion cm3/ : 5.00  
1000H.: (8.00)

#### HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 65...73

#### Testing:

1st c-rod trav.mm : 10.10  
Speed 1/min : 1190...1200  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1280...1310  
4th speed 1/min : 1375  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 9...17

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.50  
Speed 1/min : 350  
C-rod trav.mm : 6.90...7.10

#### CONSTANT REGULATION

Speed 1/min : 400...600

compensator (LDA,ADA,ALDA)

#### 1st version

##### Setting

Speed 1/min : 500  
Pressure hPa : 600  
Contr.-rod trav.mm: 11.10...11.20

##### Measurement

Speed 1/min : 500

1st pressure hPa : -  
C-rod trav.mm : 10.00...10.20  
2nd pressure hPa : 380  
C-rod trav.mm : 10.80...10.90  
3rd pressure hPa : 320  
C-rod trav.mm : 10.10...10.30

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

##### 1st version

Charge press. hPa : 600  
Speed 1/min : 650  
Del.quantity cm3/ : 160.0...166.0  
1000H.: (157.0...169.0)

Charge press. hPa : -  
Speed 1/min : 500  
Del.quantity cm3/ : 127.0...129.0  
1000H.: (124.0...132.0)  
Charge press. hPa : -  
Speed 1/min : 1150  
Del.quantity cm3/ : 118.0...121.0  
1000H.: (115.0...124.0)

#### Remarks:

: LIEBHERR  
\* = Set at reduced-delivery stop.

#### APPLICATION

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 K 3  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 840 746  
  
Injection pump  
Pump designation : PE12P120A32OLS3836-3  
EP type number : 0 411 820 720  
Governor  
Governor design. : RQV350...1150PA493-6  
Governor no. : 0 421 813 523

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 424 LA

1st version kW : 452.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing<sup>o</sup>CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-  
                                  345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 18.0...18.2  
100H.: (17.7...18.5)

Dispersion cm3/ : 0.5  
100H.: (0.9)

2nd speed 1/min: 350.0  
Contr.-rod trav. m: 5.2...5.4  
Del.quantity cm3/ : 1.6...2.2  
100H.: (1.3...2.5)  
Dispersion cm3/ : 0.8  
100H.: (1.2)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 350  
Sleeve travel mm: 2.20...2.30  
2nd speed 1/min: 510  
Sleeve travel mm: 3.20...3.50  
3rd speed 1/min: 1150  
Sleeve travel mm: 7.50...8.80  
4th speed 1/min: 1200  
Sleeve travel mm: 8.90...9.10

## SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 1180  
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1150  
Charge press. hPa : 700  
Del.quantity cm3/ : 180.0...182.0  
1000H.: (177.0...185.0)  
Dispersion cm3/ : 5.00  
1000H.: (9.00)

#### HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 61...69

Testing:  
1st c-rod trav.mm : 11.10  
Speed 1/min : 1190...1200  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1235...1265  
4th speed 1/min : 1350  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 8...16

Testing:  
Speed 1/min : 100  
C-rod trav.mm min : 6.20  
Speed 1/min : 350  
C-rod trav.mm : 4.50...4.70

#### CONSTANT REGULATION

Speed 1/min : 400...600

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 500  
Pressure hPa : 700  
Contr.-rod trav.mm: 12.10...12.20

Measurement  
Speed 1/min : 500

1st pressure hPa : -  
C-rod trav.mm : 10.10...10.30  
2nd pressure hPa : 540  
C-rod trav.mm : 11.40...11.50  
3rd pressure hPa : 470  
C-rod trav.mm : 10.60...10.80

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

1st version  
Charge press. hPa : 700

K20

Speed 1/min : 650  
Del.quantity cm3/ : 179.0...185.0  
1000H.: (176.0...188.0)  
Dispersion cm3/ : 8.00  
1000H.: (12.0)  
Charge press. hPa : 700  
Speed 1/min : 1150  
Del.quantity cm3/ : 134.0...138.0  
1000H.: (131.0...141.0)  
Dispersion cm3/ : 8.00  
1000H.: (12.0)  
Charge press. hPa : -  
Speed 1/min : 500  
Del.quantity cm3/ : 131.0...133.0  
1000H.: (128.0...136.0)  
Dispersion cm3/ : 8.00  
1000H.: (12.0)

#### Remarks:

\* = Set at reduced-delivery stop.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 L  
 Edition : 12.09.86  
 Superceeded : --  
 Calibrating oil : ISO-4113  
 Combination no. : 0 401 840 747  
 Injection pump  
 Pump designation : PE12P110A320LS3837  
 EP type number : 0 411 810 709  
 Governor  
 Governor design. : RQ900PA634  
 Governor no. : 0 421 801 165

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM 424

1st version kW : 288.0  
 Speed 1/min: 1800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
 quantity min. 1/h: 150...170

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
 : (3.95...4.15)  
 Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 12- 1- 5- 9- 8- 3-  
 : 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
 180-225-240-285-300-

SD ang. spacing°CS: 345  
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 880

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm3/ : 12.1...12.3  
 100H.: (11.8...12.5)

Dispersion cm3/ : 0.4  
 100H.: (0.8)

2nd speed 1/min: 300.0  
 Contr.-rod trav. m: 8.2...8.4  
 Del.quantity cm3/ : 1.4...2.0  
 100H.: (1.1...2.2)  
 Dispersion cm3/ : 0.4  
 100H.: (0.7)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300  
 Sleeve travel mm: 5.90...0.00

## SLEEVE POSITION

Control-lever position  
 Degree: -1

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 880  
 Del.quantity cm3/ : 121.0...123.0  
 1000H.: (118.5...125.5)  
 Dispersion cm3/ : 4.00  
 1000H.: (8.00)

## HIGHEST RATED SPEED

1st version  
 Control-lever  
 position degrees: 34...42

Testing:

1st c-rod trav.mm : 11.60  
Speed 1/min : 900...905  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 941...951  
4th speed 1/min : 1050  
C-rod trav.mm : 0.00...1.00

Remarks:

APPLICATION

Generator

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 M  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 840 748  
  
Injection pump  
Pump designation : PE12P110A32OLS3837  
EP type number : 0 411 810 709  
Governor  
Governor design. : RQ750PA636  
Governor no. : 0 421 801 167

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 424

1st version kW : 247.0  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-

SD ang. spacing°CS: 345  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.80...12.90

Del.quantity cm3/ : 12.6...12.8

100H.: (12.3...13.1)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.2...8.4

Del.quantity cm3/ : 1.2...1.8

100H.: (0.9...2.0)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 720

Sleeve travel mm: 2.40...2.60

2nd speed 1/min: 760

Sleeve travel mm: 4.90...5.10

3rd speed 1/min: 800

Sleeve travel mm: 8.00...8.20

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 126.0...128.0

1000H.: (123.0...131.0)

Dispersion cm3/ : 4.00

1000H.: (8.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 23...31



Testing:

1st c-rod trav.mm : 11.80  
Speed 1/min : 750...755  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 790...800  
4th speed 1/min : 900  
C-rod trav.mm : 0.00...1.00

Remarks:

APPLICATION

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 N  
Edition : 06.10.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 749  
Injection pump  
Pump designation : PE12P110A320LS3837-1  
EP type number : 0 411 810 710  
Governor  
Governor desig. : RQV350...1150PA378-1  
Governor no. : 0 421 813 349

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 424

1st version kW : 309.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-

SD ang. spacing°CS: 345  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 12.2...12.4

100H.: (11.9...12.7)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.7...7.9

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.4

100H.: (0.7)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1200

Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 122.0...124.0

1000H.: (119.0...127.0)

Dispersion cm3/ : 4.00

1000H.: (8.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...68

Testing:

1st c-rod trav.mm : 10.40

Speed 1/min : 1170...1180

2nd c-rod trav.mm : 4.00

Speed 1/min : 1235...1265  
4th speed 1/min : 1300  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 16...22

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 9.00  
Speed 1/min : 350  
C-rod trav.mm : 7.40...7.60

#### CONSTANT REGULATION

Speed 1/min : 375...485

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 96.0...100.0  
1000H.: (93.0...103.0)  
Dispersion cm3/ : 6.00  
1000H.: (9.00)  
Speed 1/min : 1150  
Del.quantity cm3/ : 90.0...94.0  
1000H.: (87.0...97.0)  
Dispersion cm3/ : 6.00  
1000H.: (9.00)

#### Remarks:

\* = Set at reduced-delivery stop.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 N 1  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 750  
Injection pump  
Pump designation : PE12P110A32OLS3837-2  
EP type number : 0 411 810 711  
Governor  
Governor design. : RQV350...1150PA378-4  
Governor no. : 0 421 813 521

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 424

1st version kW : 309.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 150...170

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values \_ \_ \_ \_

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
                                  180-225-240-285-300-

SD ang. spacing°CS: 345  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 12.2...12.4

100H.: (11.9...12.7)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.7...7.9

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.4

100H.: (0.7)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1200

Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 122.0...124.0

1000H.: (119.0...127.0)

Dispersion cm3/ : 4.00

1000H.: (8.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...68

Testing:

1st c-rod trav.mm : 10.40

Speed 1/min : 1170...1180

2nd c-rod trav.mm : 4.00

Speed 1/min : 1235...1265  
4th speed 1/min : 1300  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 16...22

#### Testing:

Speed 1/min : 10~  
C-rod trav.mm min : 9.00  
Speed 1/min : 350  
C-rod trav.mm : 7.40...7.60

#### CONSTANT REGULATION

Speed 1/min : 375...485

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 96.0...100.0  
1000H.: (93.0...103.0)  
Dispersion cm3/ : 6.00  
1000H.: (9.00)  
Speed 1/min : 1150  
Del.quantity cm3/ : 90.0...94.0  
1000H.: (87.0...97.0)  
Dispersion cm3/ : 6.00  
1000H.: (9.00)

#### Remarks:

\* = Set at reduced-delivery stop.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 0  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 751  
Injection pump  
Pump designation : PE12P120A320LS3838  
EP type number : 0 411 820 721  
Governor  
Governor design. : RQV350...1150PA493-1  
Governor no. : 0 421 813 363

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 424 LA

1st version kW : 441.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
: (3.95...4.15)

Contr.-rod trav.mm: 9.00...12.00

L01

Cam sequence : 12- 1- 5- 9- 8- 3  
- 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
180-225-240-285-300-  
345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.60...11.70

Del.quantity cm3/ : 17.5...17.7

100H.: (17.2...18.0)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 5.0...5.2

Del.quantity cm3/ : 1.4...2.2

100H.: (1.1...2.5)

Dispersion cm3/ : 0.8

100H.: (0.7)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. nPa : 600

Del.quantity cm3/ : 175.0...177.0

1000H.: (172.0...180.0)

Dispersion cm3/ : 5.00

1000H.: (8.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 54...62

Testing:

1st c-rod trav.mm : 10.60

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 4...12

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.70

Speed 1/min : 350

C-rod trav.mm : 5.00...5.20

CONSTANT REGULATION

Speed 1/min : 400...600

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 600

Contr.-rod trav.mm: 11.60...11.70

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.40...10.50

2nd pressure hPa : 390

C-rod trav.mm : 11.30...11.40

3rd pressure hPa : 300

C-rod trav.mm : 10.60...10.80

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 600

Speed 1/min : 650

Del.quantity cm3/ : 171.0...179.0

1000H.: (168.0...182.0)

Dispersion cm3/ : 7.50

1000H.: (-)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 143.0...145.0

1000H.: (140.0...148.0)

Dispersion cm3/ : 7.50

1000H.: (-)

Remarks:

APPLICATION

Snow plough





2nd c-rod trav.mm : 4.00  
Speed 1/min : 1165...1195  
4th speed 1/min : 1300  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 8...16

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 6.20  
Speed 1/min : 350  
C-rod trav.mm : 4.50...4.70

#### CONSTANT REGULATION

Speed 1/min : 350...600

compensator (LDA,ADA,ALDA)

#### 1st version

##### Setting

Speed 1/min : 500  
Pressure hPa : 700  
Contr.-rod trav.mm: 9.70...9.80

##### Measurement

Speed 1/min : 500

1st pressure hPa : -  
C-rod trav.mm : 9.30...9.50  
2nd pressure hPa : 360  
C-rod trav.mm : 9.50...9.60  
3rd pressure hPa : 320  
C-rod trav.mm : 9.40...9.60

#### SWITCH-OVER POINT

Speed 1/min : 270 (290)

#### FUEL-DELIVERY CHARACTERISTICS

##### 1st version

Charge press. hPa : 700  
Speed 1/min : 600  
Del.quantity cm3/ : 146.0...152.0  
1000H.: (143.0...155.0)  
Dispersion cm3/ : 8.00  
1000H.: (12.0)  
Charge press. hPa : -  
Speed 1/min : 500  
Del.quantity cm3/ : 128.0...130.0  
1000H.: (125.0...133.0)  
Dispersion cm3/ : 8.00  
1000H.: (12.0)

Remarks:

L04

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 19.2 A1  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 754  
Injection pump  
Pump designation : PE12P110A92OLS3173  
EP type number : 0 411 810 708  
Governor  
Governor design. : RQV300...1150PA820  
Governor no. : 0 421 813 561

Customer-spec. information  
Customer : KHD

Engine : BF12L513C

1st version kW : 386.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Prestroke mm : 2.80...2.90  
: (2.75...2.95)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 4- 9- 8- 5- 2-

11- 10- 3- 6- 7- 12

SD ang. spacing<sup>o</sup>CS: 0-15-60-75-120-135-  
180-195-240-255-300-  
315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

#### BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 12.40...12.50

Del.quantity cm3/ : 16.1...16.3

100H.: (15.8...16.6)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.6...6.8

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.7

100H.: (1.0)

(B) Setting of injection pump with  
externally-mounted governor

#### SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.20...1.40

2nd speed 1/min: 380

Sleeve travel mm: 2.30...2.60

3rd speed 1/min: 800

Sleeve travel mm: 5.20...5.50

4th speed 1/min: 1200

Sleeve travel mm: 8.50...8.70

5th speed 1/min: 1280

Sleeve travel mm: 9.30...9.60

#### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1190

Contr.-rod travelmm: 15.20...17.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 750

Del.quantity cm3/ : 161.0...163.0

1000H.: (158.0...166.0)

Dispersion cm3/ : 5.00  
1000H.: (8.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 51...59

Testing:

1st c-rod trav.mm : 11.40

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1290...1320

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 15...23

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.10

Speed 1/min : 300

C-rod trav.mm : 6.60...6.80

#### CONSTANT REGULATION

Speed 1/min : 300...450

#### TORQUE CONTROL

Dimension a mm : 0.40

Torque-control curve - 1st version

1st speed 1/min : 1150

C-rod trav.mm : 12.40...12.50

2nd speed 1/min : 750

C-rod trav.mm : 12.60...12.80

3rd speed 1/min : 1000

C-rod trav.mm : 12.50...12.60

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 450

Pressure hPa : 750

Contr.-rod trav.mm: 12.80...12.90

Measurement

Speed 1/min : 450

1st pressure hPa : -

C-rod trav.mm : 10.80...10.90

2nd pressure hPa : 490

C-rod trav.mm : 12.30...12.40

3rd pressure hPa : 360

C-rod trav.mm : 11.10...11.30

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

## FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 750

Speed 1/min : 750

Del.quantity cm<sup>3</sup>/ : 164.0...168.0

1000H.: (161.0...171.0)

Charge press. hPa : -

Speed 1/min : 450

Del.quantity cm<sup>3</sup>/ : 123.0...127.0

1000H.: (120.0...130.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 19.2 C  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113

Combination no. : 0 401 840 755

Injection pump  
Pump designation : PE12P110A920LS3173  
EP type number : 0 411 810 708  
Governor  
Governor design. : RQV750PA823  
Governor no. : 0 421 813 573

Customer-spec. information  
Customer : KHD

Engine : BF12L513C

1st version kW : 263.0  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Prestroke mm : 2.80...2.90  
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 4- 9- 8- 5- 2-

11- 10- 3- 6- 7- 12

Generator

SD ang. spacing<sup>0</sup>CS: 0-15-60-75-120-135-1  
80-195-240-255-300-3  
15  
Tolerance + - <sup>0</sup> : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 15.6...15.8

100H.: (15.3...16.1)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.6...6.8

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.7

100H.: (1.0)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 156.0...158.0

1000H.: (153.0...161.0)

Dispersion cm3/ : 5.00

1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 24...32

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min : 780...787

4th speed 1/min : 820

C-rod trav.mm : 0.00...1.00

Remarks:

APPLICATION

L09

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 20,9 X  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 840 756  
Injection pump  
Pump designation : PE12P120A520/4LS3840  
EP type number : 0 411 820 724  
Governor  
Governor design. : RQ250/1150PA739  
Governor no. : 0 421 801 279

Customer-spec. information  
Customer : MAN

Engine : D2842LE

1st version kW : 529.0

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30  
: (4.15...4.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
- 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
180-225-240-285-300-  
345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 19.5...19.7

100H.: (19.2...20.0)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm3/ : 0.8

100H.: (1.2)

## SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 550

Contr.-rod travelmm: 19.20...20.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 1000

Del.quantity cm3/ : 195.0...197.0

1000H.: (192.0...200.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 550

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 10.40

Speed 1/min : 1220...1235  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1415...1445

Remarks:

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 11...19  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 7.0

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.50  
Speed 1/min : 250  
C-rod trav.mm : 6.90...7.10  
C-rod trav.mm : 2.00  
Speed 1/min : 315...355

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1150  
C-rod trav.mm : 11.40...11.50  
2nd speed 1/min : 750  
C-rod trav.mm : 11.40...11.60

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 500  
Pressure hPa : 1000  
Contr.-rod trav.mm: 11.40...11.50

#### Measurement

Speed 1/min : 500  
1st pressure hPa : -  
C-rod trav.mm : 8.90...9.00  
2nd pressure hPa : 300  
C-rod trav.mm : 9.20...9.30  
3rd pressure hPa : 520  
C-rod trav.mm : 10.70...11.00

#### SWITCH-OVER POINT

Speed 1/min : 170 (190)

#### FUEL-DELIVERY CHARACTERISTICS

##### 1st version

Charge press. hPa : 1000  
Speed 1/min : 750  
Del.quantity cm3/ : 200.0...206.0  
1000H.: (197.0...209.0)  
Charge press. hPa : -  
Speed 1/min : 500  
Del.quantity cm3/ : 119.0...121.0  
1000H.: (116.0...124.0)



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 20,9 X1  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 840 757  
  
Injection pump  
Pump designation : PE12P120A520/4LS3840  
EP type number : 0 411 820 724  
Governor  
Governor design. : RQV250...1150PA668-7  
Governor no. : 0 421 813 481

Customer-spec. information  
Customer : MAN

Engine : D2842LE

1st version kW : 560.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30  
                  : (4.15...4.35)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 12- 1- 5- 9- 8- 3  
                  - 4- 11- 10- 2- 6- 7

SD ang. spacing<sup>o</sup>CS: 0-45-60-105-120-165-  
                          180-225-240-285-300-  
SD ang. spacing<sup>o</sup>CS: 345  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 12

#### BASIC SETTING

1st speed 1/mi: 1150  
-----  
Contr.-rod trav.mm: 11.90...12.00  
-----  
Del.quantity cm<sup>3</sup>/ : 20.0...20.2  
-----  
                  100H.: (19.7...20.5)  
-----  
Dispersion cm<sup>3</sup>/ : 0.5  
-----  
                  100H.: (0.9)  
-----  
2nd speed 1/min: 250.0  
Contr.-rod trav. m: 6.9...7.1  
Del.quantity cm<sup>3</sup>/ : 1.7...2.3  
                  100H.: (1.4...2.6)  
Dispersion cm<sup>3</sup>/ : 0.8  
                  100H.: (1.2)

(B) Setting of injection pump with  
externally-mounted governor

#### SLEEVE TRAVELS

1st speed 1/min: 350  
Sleeve travel mm: 2.00...2.50  
2nd speed 1/min: 900  
Sleeve travel mm: 6.70...6.90  
3rd speed 1/min: 1150  
Sleeve travel mm: 8.50...8.60

#### SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 1150  
Contr.-rod travelmm: 15.20...17.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1150  
Del.quantity cm<sup>3</sup>/ : 200.0...202.0  
                  1000H.: (197.0...205.0)

Dispersion cm<sup>3</sup>/ : 5.00  
                  1000H.: (9.00)

#### HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 62...70

#### Testing:

1st c-rod trav.mm : 10.90  
Speed 1/min : 1190...1200  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1320...1350  
4th speed 1/min : 1450  
C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever  
position degrees: 8...16

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.50  
Speed 1/min : 250  
C-rod trav.mm : 6.90...7.10  
C-rod trav.mm : 2.00  
Speed 1/min : 400...460

#### SWITCH-OVER POINT

Speed 1/min : 200 (220)

Remarks:

: MAN-NR. 2-7826

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 20,9 X2  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 401 840 759  
 Injection pump  
 Pump designation : PE12P120A520/4LS3840  
 EP type number : 0 411 820 724  
 Governor  
 Governor design. : RQ1200PA664-2  
 Governor no. : 0 421 801 355

Customer-spec. information  
 Customer : MAN

Engine : D2842LE

1st version kW : 560.0  
 Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 1 688 901 019

Opening  
 pressure, bar : 207...210

Perforated-plate  
 diameter mm : 0,8

Test inj. tubing : 1 680 750 075

Outside diameter  
 x Wall thickness  
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30  
 : (4.15...4.35)  
 Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 12- 1- 5- 9- 8- 3  
 : 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-  
 180-225-240-285-300-

SD ang. spacing°CS: 345  
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 20.0...20.2

100H.: (19.7...20.5)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm3/ : 0.8

100H.: (1.2)

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 200.0...202.0

1000H.: (197.0...205.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

## HIGHEST RATED SPEED

Testing:

1st c-rod trav.mm : 10.90

Speed 1/min : 1225...1240

2nd c-rod trav.mm : 4.00

Speed 1/min : 1285...1315

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

Remarks:

: MAN-NR. 2-7831

APPLICATION

Generator set

## BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet	: MAN 20,9 Y
Edition	: 12.09.86
Superceeded	: -
Calibrating oil	: ISO-4113
Combination no.	: 0 401 840 760
Injection pump	
Pump designation	: PE12P120A520/4LS3841
EP type number	: 0 411 820 725
Governor	
Governor design.	: RQ750PA663-7
Governer no.	: 0 421 801 331

Customer-spec. information  
Customer : MAN

**Engine** : D2842LE

1st version kW : 380.0  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

**Inlet press., bar : 1.50**

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening pressure, bar : 207...210

Perforated-plate  
diameter mm : 0.8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values

### START OF DELIVERY

Test pressure, bar: 25...27

```

Prestroke mm      : 4.20...4.30
                   : (4.15...4.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence      : 12- 1- 5-  9-  8-  3-
                   : - 4- 11- 10- 2- 6- 7-

```

SD ang. spacing<sup>o</sup>CS: 0-45-60-105-120-165-  
180-225-240-285-300-

SD ang. spacing<sup>0</sup>CS: 345  
Tolerance + -<sup>0</sup>: 0.50 (0.75)

SD mark cyl. no. : 12

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 21.5...21.7

100H.: (21.2...22.0)

Dispersion cm<sup>3</sup>/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/ : 1.7...2.3  
100H.: (1.4...2.6)

Dispersion cm<sup>3</sup>/ : 0.8  
100H.: (1.2)

FULL-LOAD DELIV. AT FULL-LOAD STOP

```

1st version
Speed      1/min: 700
Del.quantity cm3/ : 215.0...217.0
            1000H.: (212.0...220.0)
Dispersion cm3/ : 5.00
            1000H.: (9.00)

```

## HIGHEST RATED SPEED

```
1st version
Control-lever
position degrees: -
```

```

Testing:
1st c-rod trav.mm : 12.10
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 797...810
4th speed 1/min : 950
C-rod trav.mm : 0.00...1.00

```

LOWEST RATED SPEED I

Testing:  
Speed 1/min : 100

Remarks:  
APPLICATION : MAN-NR. 2-7828

Generator set

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6 18  
Edition : 12.09.86  
Superceeded : 11.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 846 463  
  
Injection pump  
Pump designation : PE6P110A32ORS372-1  
EP type number : 0 411 816 145  
Governor  
Governor design. : RQ250/1100PA417-1  
Governor no. : 0 421 801 205

Customer-spec. information  
Customer : DAF

Engine : DKTD 1160

1st version kW : 191.0  
Speed 1/min: 2200

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90  
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 13.7...13.9

100H.: (13.4...14.1)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.6...6.8

Del.quantity cm3/ : 0.7...1.1

100H.: (0.4...1.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 700

Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 700

Del.quantity cm3/ : 137.0...139.0

1000H.: (134.5...141.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 700

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1220...1250

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Control-lever

position degrees: 8...16  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 6.7

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 7.80  
Speed 1/min : 250  
C-rod trav.mm : 6.60...6.80  
C-rod trav.mm : 2.00  
Speed 1/min : 460...500

TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 850  
C-rod trav.mm : 12.00...12.10  
2nd speed 1/min : 1100  
C-rod trav.mm : 11.90...12.10

compensator (LDA,ADA,ALDA)

1st version

Setting  
Speed 1/min : 600  
Pressure hPa : 700  
Contr.-rod trav.mm: 12.00...12.10

Measurement

Speed 1/min : 600  
1st pressure hPa : -  
C-rod trav.mm : 11.40...11.60  
2nd pressure hPa : 300  
C-rod trav.mm : 11.80...11.90  
3rd pressure hPa : 280  
C-rod trav.mm : 11.50...11.70

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -  
Speed 1/min : 600  
Del.quantity cm3/ : 128.0...130.0  
1000h.: (125.5...132.5)

Remarks:

See VDT-I-420/115



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6 T6  
 Edition : 12.09.86  
 Superseded : 5.85  
 Calibrating oil : ISO-4113  
 Combination no. : 0 401 846 465  
 Injection pump  
 Pump designation : PE6P100A320RS384-1  
 EP type number : 0 411 806 189  
 Governor  
 Governor design. : RQ225/1000PA571  
 Governor no. : 0 421 801 141

Customer-spec. information  
 Customer : DAF

Engine : DKDL 1160

1st version kW : 125.0  
 Speed 1/min: 2000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30  
 : (3.15...3.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 9.8...10.0

100H.: (9.6...10.2)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.5...7.7

Del.quantity cm3/ : 0.9...1.3

100H.: (0.6...1.5)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 550

Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600

Del.quantity cm3/ : 98.0...100.0

1000H.: (96.0...102.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 550

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 9.60

Speed 1/min : 1045...1060

2nd c-rod trav.mm : 4.00

Speed 1/min : 1100...1130

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 7.6

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.40  
Speed 1/min : 250  
C-rod trav.mm : 7.50...7.70  
C-rod trav.mm : 2.00  
Speed 1/min : 345...385

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 600  
C-rod trav.mm : 11.40...11.50  
2nd speed 1/min : 1000  
C-rod trav.mm : 10.60...10.80  
3rd speed 1/min : 820  
C-rod trav.mm : 11.20...11.40  
4th speed 1/min : 900  
C-rod trav.mm : 10.80...11.10

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1000  
Del.quantity cm3/ : 93.0...97.0  
1000H.: (90.5...99.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6 N3  
Edition : 12.09.86  
Superceeded : 11.85  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 469  
Injection pump  
Pump designation : PE6P110A32ORS407-1  
EP type number : 0 411 816 147  
Governor  
Governor design. : RQ250/1100PA428/2R  
Governer no. : 0 421 801 093

Customer-spec. information  
Customer : DAF

Engine : DKTL1160

1st version kW : 185.0  
Speed 1/min: 2200

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90  
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 12.30...12.40

Del.quantity cm3/ : 14.1...14.3

100H.: (13.8...14.5)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.1...7.3

Del.quantity cm3/ : 1.0...1.4

100H.: (0.7...1.6)

Dispersion cm3/ : 0.4

100H.: (0.7)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Cont.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 700

Del.quantity cm3/ : 141.0...143.0

1000H.: (138.5...145.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 11.30

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1200...1230

4th speed 1/min : 1500

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250  
Contr.-rod trav.mm: 7.2

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 7.80  
Speed 1/min : 250  
C-rod trav.mm : 7.10...7.30  
C-rod trav.mm : 2.00  
Speed 1/min : 345...385

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 850  
C-rod trav.mm : 12.30...12.40  
2nd speed 1/min : 1100  
C-rod trav.mm : 12.20...12.40

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600  
Pressure hPa : 700  
Contr.-rod trav.mm: 12.30...12.40

Measurement

Speed 1/min : 600

1st pressure hPa : -  
C-rod trav.mm : 12.00...12.10  
2nd pressure hPa : 300  
C-rod trav.mm : 12.10...12.20

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -  
Speed 1/min : 600  
Del.quantity cm3/ : 137.0...139.0  
1000H.: (134.5...141.5)

Remarks:

See VDT-I-420/115

APPLICATION

Omnibus

L24

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6 N4  
Edition : 12.09.86  
Superceeded : 6.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 846 474  
  
Injection pump  
Pump designation : PE6P110A32ORS407-1  
EP type number : 0 411 816 147  
Governor  
Governor design. : RQ275/1000PA641-1  
Governor no. : 0 421 801 175

Customer-spec. information  
Customer : DAF

Engine : DKCL 1160

1st version kW : 155.0  
Speed 1/min: 2000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values \_ \_ \_ \_

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90  
: (2.75...2.95)  
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

#### BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 12.30...12.40

Del.quantity cm3/ : 13.9...14.1

100H.: (13.7...14.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 275.0

Contr.-rod trav. m: 7.0...7.2

Del.quantity cm3/ : 0.9...1.4

100H.: (0.6...1.6)

Dispersion cm3/ : 0.4

100H.: (0.7)

#### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

##### 1st version

Speed 1/min: 600

Charge press. hPa : 700

Del.quantity cm3/ : 139.5...141.5

1000H.: (137.0...144.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

#### HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

##### Testing:

1st c-rod trav.mm : 10.10

Speed 1/min : 1045...1060

2nd c-rod trav.mm : 4.00

Speed 1/min : 1105...1135

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 275

Contr.-rod trav.mm: 7.1

##### Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.60

Speed 1/min : 275

C-rod trav.mm : 7.00...7.20

C-rod trav.mm : 2.50

Speed 1/min : 335...375

#### TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 600

C-rod trav.mm : 12.50...12.60

2nd speed 1/min : 1000

C-rod trav.mm : 11.10...11.30

3rd speed 1/min : 740

C-rod trav.mm : 12.10...12.30

4th speed 1/min : 875

C-rod trav.mm : 11.40...11.70

compensator (LDA,ADA,ALDA)

##### 1st version

Setting

Speed 1/min : 600

Pressure hPa : 700

Contr.-rod trav.mm: 12.30...12.40

##### Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 12.10...12.20

2nd pressure hPa : 275

C-rod trav.mm : 12.20...12.30

#### FUEL-DELIVERY CHARACTERISTICS

##### 1st version

Charge press. hPa : 700

Speed 1/min : 1000

Del.quantity cm3/ : 115.0...119.0

1000H.: (112.0...122.0)

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 137.0...139.0

1000H.: (134.5...141.5)

##### Remarks:

See VDT-I-420/115

APPLICATION

Omnibus

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 7,1 A 4  
Edition : 11.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 505 E  
Injection pump  
Pump designation : PE6P110A32ORS483E  
EP type number : 0 411 816 159  
Governor  
Governor design. : RQV250...1100PA499-1

Customer-spec. information  
Customer : DLVO

Engine : TD71

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10  
: (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0,50 (0,75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.2...11.3

Del.quantity cm3/ : 10.9...11.1

100H.: (10.6...11.4)

Dispersion cm3/ : 0.40

100H.: (0.75)

2nd speed 1/min: 250

Contr.-rod trav. m: 5.30...5.50

Del.quantity cm3/ : 1.60...2.00

100H.: (-)

Dispersion cm3/ : 0.30

100H.: (0.60)

## SLEEVE POSITION

Control-lever position

Degree: MAX.

Speed 1/min: 1200

Cont.-rod travelmm: 15.2...17.8

## FULL-LOAD DELIV. AT FULL-LOAD STOP

### 1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 109.0...111.0

1000H.: (106.0...114.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

## HIGHEST RATED SPEED

### 1st version

Control-lever

position degrees: 54...62

### Testing:

1st c-rod trav.mm : 10.20

Speed 1/min : 1160...1170

2nd c-rod trav.mm : 4.00

Speed 1/min : 1260...1290

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Control-lever

position degrees: 5...13

### Testing:



Speed 1/min : 100  
C-rod trav.mm/min : 6.80  
Speed 1/min : 250  
C-rod trav.mm : 5.30...5.50

#### CONSTANT REGULATION

Speed 1/min : 300...410

compensator (LDA,ADA,ALDA)

#### 1st version

##### Setting

Speed 1/min : 500  
Pressure hPa : 900  
Contr.-rod trav.mm: 11.20...11.30

##### Measurement

Speed 1/min : 500

1st pressure hPa : -  
C-rod trav.mm : 8.70...8.90  
2nd pressure hPa : 600  
C-rod trav.mm : 11.00...11.10  
3rd pressure hPa : 300  
C-rod trav.mm : 9.10...9.30

#### FUEL-DELIVERY CHARACTERISTICS

##### 1st version

Charge press. hPa : 900  
Speed 1/min : 1000  
Del.quantity cm3/ : 110.0...114.0  
1000H.: (107.0...117.0)  
Charge press. hPa : -  
Speed 1/min : 700  
Del.quantity cm3/ : 68.0...70.0  
1000H.: (65.0...73.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6M13  
Edition : 12.09.86  
Superceeded : 5.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 846 512  
  
Injection pump  
Pump designation : PE6P100A32ORS384-1  
EP type number : 0 411 806 189  
Governor  
Governor design. : RQ525/1100PA574-1  
Governor no. : 0 421 801 289

Customer-spec. information  
Customer : DAF

Engine : DK1160V

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30  
: (3.15...3.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 10.8...11.0

100H.: (10.6...11.2)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 7.2...7.4

Del.quantity cm3/ : 1.0...1.4

100H.: (0.7...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 550

Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

### 1st version

Speed 1/min: 600

Del.quantity cm3/ : 108.0...110.0

1000H.: (106.0...112.0)

Dispersion cm3/ : 3.50

1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 550

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 9.10

Speed 1/min : 1140...1155

2nd c-rod trav.mm : 4.00

Speed 1/min : 1170...1200

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Setting point w/out aux. spring

Speed 1/min : 225

Contr.-rod trav.mm: 7.3

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 7.50  
Speed 1/min : 225  
C-rod trav.mm : 7.20...7.40  
C-rod trav.mm : 2.00  
Speed 1/min : 325...365

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 600  
C-rod trav.mm : 11.10...11.20  
2nd speed 1/min : 1050  
C-rod trav.mm : 10.10...10.30  
3rd speed 1/min : 820  
C-rod trav.mm : 10.80...11.00  
4th speed 1/min : 925  
C-rod trav.mm : 10.30...10.60

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1050  
Del.quantity cm3/ : 97.0...101.0  
1000H.: (94.5...103.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 7.1 B  
Edition : 12.09.86  
Superceeded : 7.86  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 517  
Injection pump  
Pump designation : PE6P110A320RS494  
EP type number : 0 411 816 162  
Governor  
Governor design. : RQV300...1200PA435-3  
Governor no. : 0 421 813 498

Customer-spec. information  
Customer : VOLVO-BM

Engine : TD 71GA

1st version kW : 157.0  
Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10  
: (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 10.90...11.00

Del.quantity cm3/ : 10.7...10.9

100H.: (10.4...11.2)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 4.6...4.8

Del.quantity cm3/ : 1.2...1.6

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.60

2nd speed 1/min: 400

Sleeve travel mm: 2.40...2.70

3rd speed 1/min: 800

Sleeve travel mm: 4.50...4.70

4th speed 1/min: 1240

Sleeve travel mm: 8.20...8.40

5th speed 1/min: 1330

Sleeve travel mm: 9.20...9.40

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1200

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 1000

Del.quantity cm3/ : 107.0...109.0

1000H.: (104.0...112.0)

Dispersion cm3/ : 4.00

1000H.: (8.00)

# HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 61...69

## Testing:

1st c-rod trav.mm : 9.90

Speed 1/min : 1240...1250

2nd c-rod trav.mm : 4.00

Speed 1/min : 1310...1340

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

# LOWEST RATED SPEED I

Control-lever

position degrees: 7...15

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.10

Speed 1/min : 300

C-rod trav.mm : 4.60...4.80

# CONSTANT REGULATION

Speed 1/min : 300...480

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 1000

Contr.-rod trav.mm: 10.90...11.00

## Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.00...10.10

2nd pressure hPa : 380

C-rod trav.mm : 10.70...10.80

3rd pressure hPa : 290

C-rod trav.mm : 10.20...10.40

# FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1000

Speed 1/min : 1000

Del.quantity cm3/ : 109.5...112.5

1000H.: (106.0...116.0)

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm3/ : 89.0...91.0

1000H.: (86.0...94.0)

Remarks:

: D 5350

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 A1  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 846 518  
  
Injection pump  
Pump designation : PE6P120A32ORS495Z  
EP type number : 0 411 826 139  
Governor  
Governor design. : RQ250/1000PA766  
Governor no. : 0 421 801 314

Customer-spec. information  
Customer : DAF

Engine : DWS 240

1st version kW : 240,0  
Speed 1/min: 2000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
                  : (2.55...2.75)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

#### BASIC SETTING

1st speed 1/mi: 850  
-----  
Contr.-rod trav.mm: 12.90...13.00  
-----  
Del.quantity cm3/ : 18.9...19.1  
                  100H.: (18.6...19.4)  
-----  
Dispersion cm3/ : 0.5  
                  100H.: (0.9)  
-----  
2nd speed 1/min: 250.0  
Contr.-rod trav. m: 7.5...7.7  
Del.quantity cm3/ : 1.6...2.2  
                  100H.: (1.3...2.5)  
Dispersion cm3/ : 0.8  
                  100H.: (1.2)

#### SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 550  
Contr.-rod travelmm: 15.60...16.40

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 850  
Charge press. hPa : 700  
Del.quantity cm3/ : 189.0...191.0  
                  1000H.: (186.0...194.0)  
Dispersion cm3/ : 5.00  
                  1000H.: (9.00)

#### HIGHEST RATED SPEED

Setting point:  
Speed 1/min : 550  
Contr.-rod trav.mm: 16.0

Testing:  
1st c-rod trav.mm : 11.90  
Speed 1/min : 1035...1050  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1085...1115  
4th speed 1/min : 1250  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I  
Setting point w/out aux. spring  
Speed 1/min : 250  
Contr.-rod trav.mm: 6.8

Testing:  
Speed 1/min : 100  
C-rod trav.mm min : 8.30  
Speed 1/min : 250  
C-rod trav.mm : 6.70...6.90  
C-rod trav.mm : 2.00  
Speed 1/min : 330...370

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 850  
C-rod trav.mm : 13.10...13.20  
2nd speed 1/min : 990  
C-rod trav.mm : 13.00...13.20

compensator (LDA,ADA,ALDA)

#### 1st version

Setting  
Speed 1/min : 600  
Pressure hPa : 700  
Contr.-rod trav.mm: 12.90...13.00

#### Measurement

Speed 1/min : 600  
1st pressure hPa : -  
C-rod trav.mm : 11.50...11.70  
2nd pressure hPa : 370  
C-rod trav.mm : 12.50...12.60  
3rd pressure hPa : 330  
C-rod trav.mm : 11.90...12.10

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -  
Speed 1/min : 600  
Del.quantity cm3/ : 141.0...143.0  
                  1000H.: (138.0...146.0)

Remarks:  
See VDT-I-420/115

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 A  
Edition : 12.09.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 519  
Injection pump  
Pump designation : PE6P120A32ORS495  
EP type number : 0 411 826 138  
Governor  
Governor design. : RQ250/1000PA766  
Governor no. : 0 421 801 314

Customer-spec. information  
Customer : DAF

Engine : DWS 270

1st version kW : 270.0  
Speed 1/min: 2000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

START OF DELIVERY  
Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60  
: (2.45...2.65)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 850  
Contr.-rod trav.mm: 13.90...14.00  
Del.quantity cm3/ : 21.1...21.3  
100H.: (20.8...21.6)  
Dispersion cm3/ : 0.5  
100H.: (0.9)

2nd speed 1/min: 250.0  
Contr.-rod trav. m: 7.5...7.7  
Del.quantity cm3/ : 1.6...2.2  
100H.: (1.3...2.5)  
Dispersion cm3/ : 0.8  
100H.: (1.2)

## SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 550  
Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 850  
Charge press. hPa : 700  
Del.quantity cm3/ : 211.0...213.0  
1000H.: (208.0...216.0)  
Dispersion cm3/ : 5.00  
1000H.: (9.00)

## HIGHEST RATED SPEED

Setting point:  
Speed 1/min : 550  
Contr.-rod trav.mm: 16.0

Testing:  
1st c-rod trav.mm : 12.90  
Speed 1/min : 1035...1050  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1085...1115  
4th speed 1/min : 1250  
C-rod trav.mm : 0.00...1.00



# LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.8

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.30

Speed 1/min : 250

C-rod trav.mm : 6.70...6.90

C-rod trav.mm : 2.00

Speed 1/min : 330...370

## TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 850

C-rod trav.mm : 14.10...14.20

2nd speed 1/min : 1000

C-rod trav.mm : 14.00...14.20

compensator (LDA,ADA,ALDA)

## 1st version

Setting

Speed 1/min : 600

Pressure hPa : 700

Contr.-rod trav.mm: 13.90...14.00

## Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 11.40...11.60

2nd pressure hPa : 440

C-rod trav.mm : 13.30...13.40

3rd pressure hPa : 330

C-rod trav.mm : 11.80...12.20

## FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 141.0...143.0

1000H.: (138.0...146.0)

## Remarks:

See VDT-I-420/115

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 C  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 520  
Injection pump  
Pump designation : PE6P120A32ORS506  
EP type number : 0 411 826 141  
Governor  
Governor design. : RQ250/1000PA765  
Governor no. : 0 421 801 313

Customer-spec. information  
Customer : DAF

Engine : DWT 210

1st version kW : 210,0  
Speed 1/min: 2000

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90  
                  : (2.75...2.95)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 600  
-----  
Contr.-rod trav.mm: 12.80...12.90  
-----  
Del.quantity cm3/ : 18.7...18.9  
-----  
100H.: (18.4...19.2)  
-----  
Dispersion cm3/ : 0.5  
-----  
100H.: (0.9)  
-----

2nd speed 1/min: 250.0  
Contr.-rod trav. m: 7.4...7.6  
Del.quantity cm3/ : 1.6...2.2  
100H.: (1.3...2.5)  
Dispersion cm3/ : 0.8  
100H.: (1.2)

## SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 550  
Contr.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 600  
Charge press. hPa : 700  
Del.quantity cm3/ : 187.0...189.0  
1000H.: (184.0...192.0)  
Dispersion cm3/ : 5.00  
1000H.: (9.00)

## HIGHEST RATED SPEED

Setting point:  
Speed 1/min : 550  
Contr.-rod trav.mm: 16.0

Testing:  
1st c-rod trav.mm : 10.90  
Speed 1/min : 1035...1050  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1105...1135  
4th speed 1/min : 1250  
C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.8

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.00

Speed 1/min : 250

C-rod trav.mm : 6.70...6.90

C-rod trav.mm : 2.00

Speed 1/min : 330...370

## TORQUE CONTROL

Dimension a mm : 0.55

Torque-control curve - 1st version

1st speed 1/min : 600

C-rod trav.mm : 13.00...13.10

2nd speed 1/min : 990

C-rod trav.mm : 11.90...12.10

3rd speed 1/min : 800

C-rod trav.mm : 12.50...12.80

4th speed 1/min : 900

C-rod trav.mm : 11.90...12.20

compensator (LDA,ADA,ALDA)

## 1st version

Setting

Speed 1/min : 600

Pressure hPa : 700

Contr.-rod trav.mm: 12.80...12.90

## Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 11.20...11.40

2nd pressure hPa : 300

C-rod trav.mm : 12.40...12.50

3rd pressure hPa : 260

C-rod trav.mm : 11.70...11.90

## FUEL-DELIVERY CHARACTERISTICS

### 1st version

Charge press. hPa : 700

Speed 1/min : 990

Del.quantity cm3/ : 178.0...182.0

1000H.: (175.0...185.0)

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 141.0...143.0

1000H.: (138.0...146.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6 Y4  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113

Combination no. : 0 401 846 521

Injection pump  
Pump designation : PE6P120A32ORS415-1  
EP type number : 0 411 826 123  
Governor  
Governor design. : RQ250/1100PA417-5  
Governor no. : 0 421 801 317

Customer-spec. information  
Customer : DAF

Engine : DKV 1160

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

START OF DELIVERY  
Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90  
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

#### BASIC SETTING

1st speed 1/mi: 650

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 16.7...16.9

100H.: (16.4...17.2)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.5...6.7

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

#### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 700

Contr.-rod travelmm: 15.60...16.40

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

##### 1st version

Speed 1/min: 650

Charge press. hPa : 700

Del.quantity cm3/ : 167.0...169.0

1000H.: (164.0...172.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

#### HIGHEST RATED SPEED

Setting point:

Speed 1/min : 700

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 8.60

Speed 1/min : 1130...1145

2nd c-rod trav.mm : 4.00

Speed 1/min : 1180...1210

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.3

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.20

Speed 1/min : 250

C-rod trav.mm : 6.20...6.40

C-rod trav.mm : 2.00

Speed 1/min : 440...480

#### TORQUE CONTROL

Dimension a mm : 0.77

Torque-control curve - 1st version

1st speed 1/min : 650

C-rod trav.mm : 11.20...11.30

2nd speed 1/min : 1090

C-rod trav.mm : 9.60...9.80

3rd speed 1/min : 825

C-rod trav.mm : 10.70...10.90

4th speed 1/min : 975

C-rod trav.mm : 9.90...10.20

compensator (LDA,ADA,ALDA)

##### 1st version

Setting

Speed 1/min : 600

Pressure hPa : 700

Contr.-rod trav.mm: 11.00...11.10

##### Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 9.80...10.00

2nd pressure hPa : 290

C-rod trav.mm : 10.70...10.90

3rd pressure hPa : 260

C-rod trav.mm : 10.20...10.50

#### FUEL-DELIVERY CHARACTERISTICS

##### 1st version

Charge press. hPa : 700

Speed 1/min : 1090

Del.quantity cm3/ : 147.0...151.0

1000H.: (144.0...154.0)

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 135.0...137.0

1000H.: (132.0...140.0)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : RVI 11,9 A  
 Edition : 07.11.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 401 846 522  
 Injection pump  
 Pump designation : PE6P110A720RS380  
 EP type number : 0 411 816 126  
 Governor  
 Governor design. : RQV250...1050PA434-3  
 Governor no. : 0 421 813 510

Customer-spec. information  
 Customer : RVI

Engine : BSR 36 D

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90  
 : (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>o</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

#### BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 15.60...15.70

Del.quantity cm3/ : 19.4...19.7

100H.: (19.1...19.9)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.8...8.0

Del.quantity cm3/ : 1.4...1.9

100H.: (1.1...2.1)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with  
externally-mounted governor

#### SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.70...2.00

2nd speed 1/min: 850

Sleeve travel mm: 6.10...6.30

3rd speed 1/min: 1050

Sleeve travel mm: 7.90...8.10

#### SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1100

Contr.-rod travelmm: 15.20...17.80

#### FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Charge press. hPa : 700

Del.quantity cm3/ : 194.0...197.0

1000H.: (191.5...199.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

Testing:

M16

1st c-rod trav.mm : 14.60

Speed 1/min : 1090...1100

2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 11...19

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.40

Speed 1/min : 250

C-rod trav.mm : 7.80...8.00

#### CONSTANT REGULATION

Speed 1/min : 345...465

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 15.60...15.70

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 13.20...13.30

2nd pressure hPa : 360

C-rod trav.mm : 15.10...15.20

3rd pressure hPa : 280

C-rod trav.mm : 13.90...14.20

#### FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm3/ : 144.0...147.0

1000H.: (141.5...149.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 7,1 B 3  
Edition : 12.09.86  
Superceeded : 7.86  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 846 524  
  
Injection pump  
Pump designation : PE6P110A32ORS494-1  
EP type number : 0 411 816 168  
Governor  
Governor design. : RQV300...1200PA435-4  
Governor no. : 0 421 813 527

Customer-spec. information  
Customer : VOLVO-BM

Engine : TD 71K

1st version kW : 177.0  
Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10  
: (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm3/ : 12.1...12.3

100H.: (11.8...12.6)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 4.8...5.0

Del.quantity cm3/ : 1.7...2.1

Dispersion cm3/ : 0.3

100H.: (0.6)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1200

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 1000

Del.quantity cm3/ : 121.0...123.0

1000H.: (118.0...126.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...68

Testing:

1st c-rod trav.mm : 10.90

Speed 1/min: 1240...1250

2nd c-rod trav.mm : 4.00

Speed 1/min: 1320...1350

4th speed 1/min: 1450

C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Control-lever



position degrees: 7...15

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 6.30  
Speed 1/min : 300  
C-rod trav.mm : 4.80...5.00

CONSTANT REGULATION

Speed 1/min : 350...510

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500  
Pressure hPa : 1000  
Contr.-rod trav.mm: 11.90...12.00

Measurement

Speed 1/min : 500

1st pressure hPa : -  
C-rod trav.mm : 9.60...9.70  
2nd pressure hPa : 510  
C-rod trav.mm : 11.70...11.80  
3rd pressure hPa : 220  
C-rod trav.mm : 9.80...10.00

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1000  
Speed 1/min : 1000  
Del.quantity cm3/ : 120.5...123.5  
1000H.: (117.0...127.0)  
Charge press. hPa : -  
Speed 1/min : 700  
Del.quantity cm3/ : 79.0...81.0  
1000H.: (76.0...84.0)

Remarks:

**BOSCH INJ. PUMP TEST SPECIFICATIONS**

Note inst. in remarks column

Test sheet : DAF 11,6 X1  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 846 530  
  
Injection pump  
Pump designation : PE6P110A32ORS407-1  
EP type number : 0 411 816 147  
Governor  
Governor design. : RQ275/1000PA818  
Governor no. : 0 421 801 360

Customer-spec. information  
Customer : DAF

Engine : LT 160

1st version kW : 160.0  
Speed 1/min: 2000

**TEST BENCH REQUIREMENTS**

Calibrating-gil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

**START OF DELIVERY**

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90  
: (2.75...2.95)  
Contr.-rod trav.mm: 9.00...12.00

M20

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - ° : 0.50 (0.75)

**BASIC SETTING**

1st speed 1/mi: 600

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 13.3...13.6

100H.: (13.1...13.9)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 275.0

Contr.-rod trav. m: 7.2...7.4

Del.quantity cm3/ : 1.4...1.9

100H.: (1.1...2.1)

Dispersion cm3/ : 0.4

100H.: (0.7)

**SLEEVE POSITION**

Control-lever position

Degree: -1

Speed 1/min: 600

Contr.-rod travelmm: 15.60...16.40

**FULL-LOAD DELIV. AT FULL-LOAD STOP**

1st version

Speed 1/min: 600

Del.quantity cm3/ : 133.5...136.5

1000H.: (131.0...139.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

**HIGHEST RATED SPEED**

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 9.90

Speed 1/min : 1030...1045

2nd c-rod trav.mm : 4.00

Speed 1/min : 1090...1120

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

**LOWEST RATED SPEED I**

Setting point w/out aux. spring

Speed 1/min : 275

Contr.-rod trav.mm: 7.1

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.60  
Speed 1/min : 275  
C-rod trav.mm : 7.20...7.40  
C-rod trav.mm : 2.00  
Speed 1/min : 345...385

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 550  
C-rod trav.mm : 12.20...12.30  
2nd speed 1/min : 980  
C-rod trav.mm : 10.90...11.10  
3rd speed 1/min : 745  
C-rod trav.mm : 11.80...12.00  
4th speed 1/min : 880  
C-rod trav.mm : 11.10...11.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 980  
Del.quantity cm3/ : 111.5...116.5  
1000H.: (108.5...119.5)

Remarks:

See VDT-I-420/115

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VAL 7,2 B  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 532  
Injection pump  
Pump designation : PE6P110A32ORS856  
EP type number : 0 411 816 170  
Governor  
Governor design. : RQV250...1150PA825  
Governor no. : 0 421 813 570

Customer-spec. information  
Customer : VALMET

Engine : 612 DSJ

1st version kW : 165.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10  
: (2.95...3.15)  
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 13.9...14.1

100H.: (13.6...14.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 7.5...7.7

Del.quantity cm3/ : 2.2...2.6

100H.: (1.9...2.8)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 325

Sleeve travel mm: 2.00...2.10

2nd speed 1/min: 380

Sleeve travel mm: 2.30...2.70

3rd speed 1/min: 470

Sleeve travel mm: 2.90...3.40

4th speed 1/min: 1200

Sleeve travel mm: 8.10...8.20

5th speed 1/min: 1310

Sleeve travel mm: 9.10...9.40

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1240

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 700

Del.quantity cm3/ : 139.0...141.0

1000H.: (136.0...144.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

# HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 42...50

## Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1290...1320

4th speed 1/min : 1450

C-rod trav.mm : 0.00...1.00

# LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.00

Speed 1/min : 325

C-rod trav.mm : 7.50...7.70

# CONSTANT REGULATION

Speed 1/min : 325...500

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 12.00...12.10

## Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.40...10.50

2nd pressure hPa : 415

C-rod trav.mm : 11.60...11.70

3rd pressure hPa : 270

C-rod trav.mm : 10.70...10.90

# FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm3/ : 102.5...105.5

1000h.: (100.0...108.0)

Tractor (tractor engines)

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

Remarks:

APPLICATION



# LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.6

## Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.40

Speed 1/min : 250

C-rod trav.mm : 6.50...6.70

C-rod trav.mm : 2.00

Speed 1/min : 455...495

## TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 850

C-rod trav.mm : 11.40...11.50

2nd speed 1/min : 1100

C-rod trav.mm : 11.30...11.50

compensator (LDA,ADA,ALDA)

## 1st version

Setting

Speed 1/min : 600

Pressure hPa : 700

Contr.-rod trav.mm: 11.40...11.50

## Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 10.00...10.10

2nd pressure hPa : 370

C-rod trav.mm : 11.00...11.10

3rd pressure hPa : 330

C-rod trav.mm : 10.40...10.80

## FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 135.5...137.5

1000H.: (132.5...140.5)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 015  
 Edition : 12.09.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 401 846 535  
 Injection pump  
 Pump designation : PE6P100A72ORS447  
 EP type number : 0 411 806 191  
 Governor  
 Governor design. : RQ225 100PA617-2  
 Governor no. : 0 421 301 370

Customer-spec. information  
 Customer : DAF

Engine : DHT 825

1st version kW : 162.0  
 Speed 1/min: 2400

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42  
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30  
 : (3.15...3.35)  
 Contr.-rod trav.mm: 9.00...12.00

M26

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300  
 Tolerance + - ° : 0.50 (0.75)

## BASIC SETTING

1st speed 1/mi: 1000  
 Contr.-rod trav.mm: 11.40...11.50  
 Del.quantity cm3/ : 11.8...12.0  
 100H.: (11.6...12.2)  
 Dispersion cm3/ : 0.3  
 100H.: (0.6)  
 2nd speed 1/min: 225.0  
 Contr.-rod trav. m: 5.3...5.5  
 Del.quantity cm3/ : 1.0...1.4  
 100H.: (0.7...1.6)  
 Dispersion cm3/ : 0.3  
 100H.: (0.5)

## SLEEVE POSITION

Control-lever position  
 Degree: -1  
 Speed 1/min: 650  
 Cont.-rod travelmm: 15.60...16.40

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
 Speed 1/min: 1000  
 Charge press. hPa : 700  
 Del.quantity cm3/ : 118.5...120.5  
 1000H.: (116.5...122.5)  
 Dispersion cm3/ : 3.50  
 1000H.: (6.00)

## HIGHEST RATED SPEED

Setting point:  
 Speed 1/min : 650  
 Contr.-rod trav.mm: 16.0

Testing:  
 1st c-rod trav.mm : 10.40  
 Speed 1/min : 1235...1250  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1305...1335  
 4th speed 1/min : 1450  
 C-rod trav.mm : 0.00...1.00

## LOWEST RATED SPEED I

Setting point w/out aux. spring



Speed 1/min : 225  
Contr.-rod trav.mm: 5.4

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 6.00  
Speed 1/min : 225  
C-rod trav.mm : 5.30...5.50  
C-rod trav.mm : 2.00  
Speed 1/min : 365...405

TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1000  
C-rod trav.mm : 11.40...11.50  
2nd speed 1/min : 1200  
C-rod trav.mm : 11.30...11.50

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600  
Pressure hPa : 700  
Contr.-rod trav.mm: 11.40...11.50

Measurement

Speed 1/min : 600  
1st pressure hPa : -  
C-rod trav.mm : 10.40...10.50  
2nd pressure hPa : 315  
C-rod trav.mm : 11.10...11.20  
3rd pressure hPa : 270  
C-rod trav.mm : 10.50...10.90

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -  
Speed 1/min : 600  
Del.quantity cm3/ : 92.5...96.5  
1000H.: (90.5...98.5)

Remarks:

See VDT-I-420/115

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MS 11,0 C 1  
Edition : 22.10.86  
Superceeded : 10.85  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 749  
Injection pump  
Pump designation : PE6P110A32OLS3805  
EP type number : 0 411 816 718  
Governor  
Governor design. : RQ300/1150PA187-6  
Governor no. : 0 421 801 155

Customer-spec. information  
Customer : DB

Engine : OM421

1st version kW : 159.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 100...120

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 13.3...13.5

100H.: (13.0...13.7)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.8...8.0

Del.quantity cm3/ : 1.2...1.8

100H.: (0.9...2.0)

Dispersion cm3/ : 0.4

100H.: (0.7)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 650

Contr.-rod travelmm: 13.20...14.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 133.0...135.0

1000H.: (130.5...137.5)

Dispersion cm3/ : 4.00

1000H.: (8.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 650

Contr.-rod trav.mm: 13.6

Testing:

1st c-rod trav.mm : 10.70

Speed 1/min : 1195...1210

2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 7.9

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.50

Speed 1/min : 300

C-rod trav.mm : 7.80...8.00

C-rod trav.mm : 2.00

Speed 1/min : 410...440

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 112.0...116.0

1000H.: (109.0...119.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PEN 12.1 A  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 811  
Injection pump  
Pump designation : PE6P120A32ORS3148  
EP type number : 0 411 826 746  
Governor  
Governor design. : RQ750PA783  
Governor no. : 0 421 801 334

Customer-spec. information  
Customer : VOLVO-PENTA

Engine : TJD121KG

1st version kW : 246.0  
Speed 1/min: 1500

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70  
: (2.55...2.75)

Contr.-rod trav.mm: 9.00...12.00

N02

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

## BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 24.6...24.9

100H.: (24.4...25.2)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 4.8...5.0

Del.quantity cm3/ : 1.5...2.0

Dispersion cm3/ : 0.4

100H.: (0.7)

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 246.5...249.5

1000H.: (244.0...252.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

## HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 21...29

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min : 776...789

4th speed 1/min : 850

C-rod trav.mm : 0.00...1.00

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 Q 5  
Edition : 12.09.86  
Superceeded : 12.85  
Calibrating oil : ISO-4113

Combination no. : 0 401 846 812

Injection pump  
Pump designation : PE6P120A320LS3815-10  
EP type number : 0 411 826 735  
Governor  
Governor design. : RQ300/1150PA511-4  
Governor no. : 0 421 801 341

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM421A

1st version kW : 184.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 100...110

Calibrating nozzle-holder  
assembly : 1 688 901 019

Opening  
pressure, bar : 207...210

Perforated-plate  
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

**START OF DELIVERY**

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
 : (3.95...4.15)  
 Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing<sup>0</sup>CS: 0-45-120-165-240-285  
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

**BASIC SETTING**

1st speed 1/mi: 1150  
 -----  
 Contr.-rod trav.mm: 10.40...10.50  
 -----  
 Del.quantity cm3/ : 15.8...16.0  
 -----  
 100H.: (15.5...16.3)  
 -----  
 Dispersion cm3/ : 0.5  
 -----  
 100H.: (0.9)  
 -----  
 2nd speed 1/min: 300.0  
 Contr.-rod trav. m: 4.9...5.1  
 Del.quantity cm3/ : 1.4...2.0  
 100H.: (1.1...2.3)  
 Dispersion cm3/ : 0.8  
 100H.: (1.2)

**SLEEVE POSITION**

Control-lever position  
 Degree: -2  
 Speed 1/min: 600  
 Contr.-rod travelmm: 19.10...20.80

**FULL-LOAD DELIV. AT FULL-LOAD STOP**

1st version  
 Speed 1/min: 1150  
 Charge press. hPa : 700  
 Del.quantity cm3/ : 158.0...160.0  
 1000H.: (155.0...163.0)  
 Dispersion cm3/ : 5.00  
 1000H.: (9.00)

**HIGHEST RATED SPEED**

Setting point:  
 Speed 1/min : 600  
 Contr.-rod trav.mm: 19.9

Testing:  
 1st c-rod trav.mm : 9.40

Speed 1/min : 1195...1210  
 2nd c-rod trav.mm : 4.00  
 Speed 1/min : 1250...1280  
 4th speed 1/min : 1360  
 C-rod trav.mm : 0.00...1.00

**LOWEST RATED SPEED I**

Setting point w/out aux. spring  
 Speed 1/min : 300  
 Contr.-rod trav.mm: 5.0

**Testing:**

Speed 1/min : 100  
 C-rod trav.mm min : 6.70  
 Speed 1/min : 300  
 C-rod trav.mm : 4.90...5.10  
 C-rod trav.mm : 2.00  
 Speed 1/min : 360...390

compensator (LDA,ADA,ALDA)

**1st version**

Setting  
 Speed 1/min : 500  
 Pressure hPa : -  
 Contr.-rod trav.mm: 10.00...10.20

**Measurement**

Speed 1/min : 500  
 1st pressure hPa : 340  
 C-rod trav.mm : 10.20...10.30

**SWITCH-OVER POINT**

Speed 1/min : 220 (240)

**FUEL-DELIVERY CHARACTERISTICS**

1st version  
 Charge press. hPa : 700  
 Speed 1/min : 600  
 Del.quantity cm3/ : 157.0...163.0  
 1000H.: (154.0...166.0)  
 Dispersion cm3/ : 8.00  
 1000H.: (12.00)  
 Charge press. hPa : -  
 Speed 1/min : 500  
 Del.quantity cm3/ : 139.0...142.0  
 1000H.: (136.0...145.0)  
 Dispersion cm3/ : 8.00  
 1000H.: (12.0)

Remarks:

## Note inst. in remarks column

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values

2nd c-rod trav.mm : 4.00

Speed 1/min : 1245...1275  
4th speed 1/min : 1400  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever  
position degrees: 8...16

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 6.50  
Speed 1/min : 350  
C-rod trav.mm : 4.90...5.10

CONSTANT REGULATION

Speed 1/min : 385...505

SWITCH-OVER POINT

Speed 1/min : 270 (290)

Remarks:

APPLICATION

Pistenbully



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 M 1  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 820  
Injection pump  
Pump designation : PE6P110A32OLS3814-10  
EP type number : 0 411 816 741  
Governor  
Governor design. : RQV375...1150PA809R  
Governor no. : 0 421 813 542

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 159.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 100...120

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
: (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 12.70...12.80

Del.quantity cm3/ : 13.4...13.6  
100H.: (13.1...13.8)

Dispersion cm3/ : 0.4  
100H.: (0.8)

2nd speed 1/min: 375.0  
Contr.-rod trav. m: 8.2...8.4  
Del.quantity cm3/ : 1.3...1.9  
100H.: (1.0...2.1)  
Dispersion cm3/ : 0.4  
100H.: (0.7)

## SLEEVE POSITION

Control-lever position  
Degree: -1  
Speed 1/min: 1150  
Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version  
Speed 1/min: 1150  
Del.quantity cm3/ : 134.0...136.0  
1000H.: (131.5...138.5)  
Dispersion cm3/ : 4.00  
1000H.: (8.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 62...70

Testing:  
1st c-rod trav.mm : 11.70  
Speed 1/min : 1180...1190  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1285...1315  
4th speed 1/min : 1400  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.50

Speed 1/min : 375

C-rod trav.mm : 8.20...8.40

C-rod trav.mm : 2.00

CONSTANT REGULATION

Speed 1/min : 375...485

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 113.0...117.0

1000H.: (110.0...120.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

Speed 1/min : 1150

Del.quantity cm3/ : 93.0...97.0

1000H.: (90.0...100.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

Remarks:

\* = Set at reduced-delivery stop.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 1  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 846 824  
  
Injection pump  
Pump designation : PE6P110A320LS3835  
EP type number : 0 411 816 749  
Governor  
Governor design. : RQV300...900PA524-10  
Governor no. : 0 421 813 549

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 441

1st version kW : 150.0  
Speed 1/min: 1800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 100...120

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 12.90...13.00

Del.quantity cm3/ : 12.6...12.8

100H.: (12.3...13.0)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.7...8.9

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

2nd speed 1/min: 800

3rd speed 1/min: 1200

4th speed 1/min: 1260

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 920

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Del.quantity cm3/ : 126.0...128.0

1000H.: (123.5...130.5)

Dispersion cm3/ : 4.00

1000H.: (8.00)

## HIGHEST RATED SPEED

1st version

Control-lever  
position degrees: 50...58

Testing:  
1st c-rod trav.mm : 11.90  
Speed 1/min : 955...965  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1010...1040  
4th speed 1/min : 1100  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever  
position degrees: 16...24

Testing:  
Speed 1/min : 100  
C-rod trav.mm min : 9.50  
Speed 1/min : 300  
C-rod trav.mm : 8.00...8.20

CONSTANT REGULATION

Speed 1/min : 300...500

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 124.0...128.0  
1000H.: (121.0...131.0)  
Dispersion cm3/ : 6.00  
1000H.: (8.00)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 2  
Edition : 23.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 829  
Injection pump  
Pump designation : PE6P110A32OLS3835  
EP type number : 0 411 816 749  
Governor  
Governor design. : RQ300/950PA827-1K  
Governor no. : 0 421 803 093

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 150.0  
Speed 1/min: 1900

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 100...120

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 12.6...12.8

100H.: (12.3...13.0)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 500

Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 775

Sleeve travel mm: 6.50...6.80

4th speed 1/min: 950

Sleeve travel mm: 7.50...7.80

5th speed 1/min: 1100

Sleeve travel mm: 9.50...10.00

## SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Cont.-rod travelmm: 16.30...17.30

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 126.0...128.0

1000H.: (123.5...130.5)

Dispersion cm3/ : 4.00  
1000H.: (8.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 32...40

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.8

Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 995...1010

2nd c-rod trav.mm : 4.00

Speed 1/min : 1060...1090

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

#### LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 8.8

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.00

Speed 1/min : 300

C-rod trav.mm : 8.80...8.99

C-rod trav.mm : 2.00

Speed 1/min : 400...440

#### TORQUE CONTROL

Dimension a mm : 2.00

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 117.0...120.0

1000H.: (114.0...123.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

Speed 1/min : 750

Del.quantity cm3/ : 120.0...124.0

1000H.: (117.0...127.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 3  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 830  
Injection pump  
Pump designation : PE6P110A32OLS3835  
EP type number : 0 411 816 749  
Governor  
Governor design. : RQV300...950PA829-1K  
Governor no. : 0 421 815 167

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 150.0  
Speed 1/min: 1900

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 100...120

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

START OF DELIVERY  
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 12.6...12.8

100H.: (12.3...13.0)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.3...8.5

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300  
Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 500

3rd speed 1/min: 775

4th speed 1/min: 950

5th speed 1/min: 1100

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 975

Cont.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 126.0...128.0

1000H.: (123.5...130.5)

Dispersion cm3/ : 4.00

1000H.: (8.00)

## HIGHEST RATED SPEED

1st version  
Control-lever  
position degrees: 57...65

Testing:

1st c-rod trav.mm : 12.10  
Speed 1/min : 995...1010  
2nd c-rod trav.mm : 4.00  
Speed 1/min : 1080...1110  
4th speed 1/min : 1300  
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever  
position degrees: 9...17

Testing:

Speed 1/min : 100  
C-rod trav.mm min : 10.00  
Speed 1/min : 300  
C-rod trav.mm : 8.30...8.50

CONSTANT REGULATION

Speed 1/min : 300...450

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 975  
C-rod trav.mm : 13.10...13.20  
2nd speed 1/min : 600  
C-rod trav.mm : 12.90...13.10  
3rd speed 1/min : 750  
C-rod trav.mm : 13.10...13.30

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del.quantity cm3/ : 117.0...120.0  
1000H.: (114.0...123.0)  
Dispersion cm3/ : 6.00  
1000H.: (9.00)  
Speed 1/min : 750  
Del.quantity cm3/ : 118.0...122.0  
1000H.: (115.0...125.0)  
Dispersion cm3/ : 6.00  
1000H.: (9.00)

Remarks:



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 4  
Edition : 12.09.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 830  
Injection pump  
Pump designation : PE6P110A320LS3835  
EP type number : 0 411 816 749  
Governor  
Governor design. : RQV300...950PA829K  
Governor no. : 0 421 815 166

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 150.0  
Speed 1/min: 1900

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 100...120

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
: (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing<sup>0</sup>CS: 0-45-120-165-240-285  
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 12.6...12.8

100H.: (12.3...13.0)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.3...8.5

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.10...1.30

2nd speed 1/min: 500

Sleeve travel mm: 3.20...3.40

3rd speed 1/min: 800

Sleeve travel mm: 5.90...6.10

4th speed 1/min: 1000

Sleeve travel mm: 8.00...8.40

5th speed 1/min: 1125

Sleeve travel mm: 9.60...10.00

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 975

Contr.-rod travelmm: 15.20...17.80

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 126.0...128.0

1000H.: (123.5...130.5)

Dispersion cm<sup>3</sup>/ : 4.00  
1000H.: (8.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

#### Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 995...1010

2nd c-rod trav.mm : 4.00

Speed 1/min : 1080...1110

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

#### LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

#### Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.00

Speed 1/min : 300

C-rod trav.mm : 8.30...8.50

#### CONSTANT REGULATION

Speed 1/min : 300...450

#### TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 975

C-rod trav.mm : 13.10...13.20

2nd speed 1/min : 600

C-rod trav.mm : 12.90...13.10

3rd speed 1/min : 750

C-rod trav.mm : 13.10...13.30

#### SWITCH-OVER POINT

Speed 1/min : 220 (240)

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm<sup>3</sup>/ : 117.0...120.0

1000H.: (114.0...123.0)

Dispersion cm<sup>3</sup>/ : 6.00

1000H.: (9.00)

Speed 1/min : 750

Del.quantity cm<sup>3</sup>/ : 118.0...122.0

1000H.: (115.0...125.0)

Dispersion cm<sup>3</sup>/ : 6.00

1000H.: (9.00)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 5  
Edition : 06.10.86  
Superceeded : -  
Calibrating oil : ISO-4113  
Combination no. : 0 401 846 833  
Injection pump  
Pump designation : PE6P110A32OLS3835  
EP type number : 0 411 816 749  
Governor  
Governor design. : RQ300/900PA827-2K  
Governor no. : 0 421 803 094

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 150.0  
Speed 1/min: 1800

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 100...120

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285  
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 13.60...13.70

Del.quantity cm3/ : 13.3...13.5

100H.: (13.0...13.7)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with  
externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 500

Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 775

Sleeve travel mm: 6.50...6.80

4th speed 1/min: 880

Sleeve travel mm: 7.50...7.80

5th speed 1/min: 930

Sleeve travel mm: 9.50...10.10

## SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 16.30...17.30

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Del.quantity cm3/ : 133.0...135.0

1000H.: (130.5...137.5)

Dispersion cm3/ : 4.00  
1000H.: (8.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 32...40

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.8

Testing:

1st c-rod trav.mm : 12.70

Speed 1/min : 945...960

2nd c-rod trav.mm : 4.00

Speed 1/min : 990...1020

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

#### LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 8.8

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.00

Speed 1/min : 300

C-rod trav.mm : 8.80...8.90

C-rod trav.mm : 2.00

Speed 1/min : 400...440

#### TORQUE CONTROL

Dimension a mm : 2.00

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 123.0...126.0

1000H.: (120.0...129.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

Speed 1/min : 750

Del.quantity cm3/ : 127.0...131.0

1000H.: (124.0...134.0)

Dispersion cm3/ : 6.00

1000H.: (9.00)

Remarks:

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 6  
 Edition : 06.10.86  
 Superceeded : -  
 Calibrating oil : ISO-4113  
 Combination no. : 0 401 846 834  
 Injection pump  
 Pump designation : PE6P110A320LS3835  
 EP type number : 0 411 816 749  
 Governor  
 Governor design. : RQ300/1050PA827-4K  
 Governor no. : 0 421 803 096

Customer-spec. information  
 Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 160.0  
 Speed 1/min: 2100

## TEST BENCH REQUIREMENTS

Calibrating-oil  
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
 quantity min. 1/h: 100...120

Calibrating nozzle-holder  
 assembly : 0 681 343 009

Opening  
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
 x Wall thickness  
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values  
 Insp. values in parentheses  
 Set constant delivery quant.  
 per values -----

START OF DELIVERY  
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
 : (3.95...4.15)  
 Contr.-rod trav.mm: 9.00...12.00  
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285  
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

## BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 13.30...13.40

Del.quantity cm3/ : 13.9...14.1

100H.: (13.6...14.3)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with  
 externally-mounted governor

## SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 500

Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 900

Sleeve travel mm: 7.00...7.30

4th speed 1/min: 1050

Sleeve travel mm: 7.60...7.90

5th speed 1/min: 1100

Sleeve travel mm: 9.50...10.00

## SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 16.30...17.30

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del.quantity cm3/ : 139.0...141.0

1000H.: (136.5...143.5)

Dispersion cm<sup>3</sup>/ : 4.00  
1000H.: (8.00)

#### HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 32...40

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.8

Testing:

1st c-rod trav.mm : 12.30

Speed 1/min : 1095...1110

2nd c-rod trav.mm : 4.00

Speed 1/min : 1160...1190

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

#### LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 8.8

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.00

Speed 1/min : 300

C-rod trav.mm : 8.80...8.90

C-rod trav.mm : 2.00

Speed 1/min : 400...440

#### TORQUE CONTROL

Dimension a mm : 2.00

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm<sup>3</sup>/ : 124.0...127.0

1000H.: (121.0...130.0)

Dispersion cm<sup>3</sup>/ : 6.00

1000H.: (9.00)

Speed 1/min : 900

Del.quantity cm<sup>3</sup>/ : 130.0...134.0

1000H.: (127.0...137.0)

Dispersion cm<sup>3</sup>/ : 6.00

1000H.: (9.00)

Remarks:

**BOSCH INJ. PUMP TEST SPECIFICATIONS**

Note inst. in remarks column

Test sheet : MB 12,8 N 2  
Edition : 12.09.86  
Superceeded : 2.83  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 848 073  
  
Injection pump  
Pump designation : PE8P100A320LSB19  
EP type number : 0 411 808 052  
Governor  
Governor design. : RQV350...1250PA378R  
Governor no. : 0 421 813 197

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM 402

1st version kW : 188.3

**TEST BENCH REQUIREMENTS**

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 100...110

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

**START OF DELIVERY**

Test pressure, bar: 25...27

Prestroke mm : 3.40...3.50  
                  : (3.35...3.55)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 8- 7- 2- 6- 3- 5-  
                  4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-  
                          270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

**BASIC SETTING**

1st speed 1/mi: 1230

Contr.-rod trav.mm: 10.30...10.40

Del.quantity cm3/ : 10.0...10.2

100H.: (9.8...10.4)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.5...7.7

Del.quantity cm3/ : 2.0...2.4

100H.: (1.7...2.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

**SLEEVE POSITION**

Speed 1/min: 1250

Contr.-rod travelmm: 15.20...17.80

**FULL-LOAD DELIV. AT FULL-LOAD STOP**

1st version

Speed 1/min: 1230

Del.quantity cm3/ : 100.0...102.0

1000H.: (98.0...104.0)

Dispersion cm3/ : 3.00

1000H.: (6.00)

**HIGHEST RATED SPEED**

1st version

Control-lever

position degrees: 61...69

**Testing:**

1st c-rod trav.mm : 9.30

Speed 1/min : 1280...1290

2nd c-rod trav.mm : 4.00

Speed 1/min : 1360...1390

4th speed 1/min : 1500

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.20

Speed 1/min : 350

C-rod trav.mm : 7.50...7.70

CONSTANT REGULATION

Speed 1/min : 400...600

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1230

Del.quantity cm<sup>3</sup>/ : 73.0...75.0

1000H.: (71.0...77.0)

\* = Set at reduced-delivery stop.





Speed 1/min : 1215...1245

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 4.6

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.20

Speed 1/min : 300

C-rod trav.mm : 4.50...4.70

C-rod trav.mm : 2.00

Speed 1/min : 320...360

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/ : 152.0...158.0

1000H.: (149.0...161.0)

Dispersion cm3/ : 8.00

1000H.: (12.00)

APPLICATION

Omnibus

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 A 1  
Edition : 12.09.86  
Superceeded : 5.85  
Calibrating oil : ISO-4113  
  
Combination no. : 0 401 848 755  
  
Injection pump  
Pump designation : PE8P110A320LS3802  
EP type number : 0 411 818 705  
Governor  
Governor design. : RQ300/1150PA437-3  
Governor no. : 0 421 801 230

Customer-spec. information  
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 184.0  
Speed 1/min: 2300

## TEST BENCH REQUIREMENTS

Calibrating-oil  
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow  
quantity min. 1/h: 100...120

Calibrating nozzle-holder  
assembly : 0 681 343 009

Opening  
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter  
x Wall thickness  
x Length mm : 6.00x1.50x600

(A) Injection pump setting values  
Insp. values in parentheses  
Set constant delivery quant.  
per values -----

## START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10  
                  : (3.95...4.15)  
Contr.-rod trav.mm: 9.00...12.00  
Cam sequence : 8- 7- 2- 6- 3- 5-  
                  4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-  
                                  270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

## BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm<sup>3</sup>/ : 11.3...11.5

100H.: (11.0...11.7)

Dispersion cm<sup>3</sup>/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.5...8.7

Del.quantity cm<sup>3</sup>/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm<sup>3</sup>/ : 0.4

100H.: (0.7)

## SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 650

Cont.-rod travelmm: 13.20...14.00

## FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm<sup>3</sup>/ : 113.0...115.0

1000H.: (110.5...117.5)

Dispersion cm<sup>3</sup>/ : 4.00

1000H.: (8.00)

## HIGHEST RATED SPEED

Setting point:

Speed 1/min : 650

Contr.-rod trav.mm: 13.6

Testing:

1st c-rod trav.mm : 10.00

Speed 1/min : 1195...1210

2nd c-rod trav.mm : 4.00

Speed 1/min : 1260...1290  
4th speed 1/min : 1350  
C-rod trav.mm : 0.00...1.50

#### LOWEST RATED SPEED I

Setting point w/out aux. spring  
Speed 1/min : 300  
Contr. rod trav.mm: 7.1

#### Testing:

Speed 1/min : 100  
C-rod trav.mm min : 8.50  
Speed 1/min : 300  
C-rod trav.mm : 7.00...7.20  
C-rod trav.mm : 2.00  
Speed 1/min : 400...440

#### TORQUE CONTROL

Torque-control curve - 1st version  
1st speed 1/min : 1150  
C-rod trav.mm : 11.00...11.10  
2nd speed 1/min : 600  
C-rod trav.mm : 11.20...11.40

#### FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600  
Del. quantity cm<sup>3</sup>/ : 92.0...96.0  
1000H.: (89.0...99.0)  
Dispersion cm<sup>3</sup>/ : 6.00  
1000H.: (9.00)

Remarks: